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ABSTRACT

This document contains nine papers from the social and ethical issues section of an international conference on vocational education and training (VET) for lifelong learning in the information era. The following papers are included: "Attitudes of University Faculty Members toward Students with Disabilities" (Marie F. Kraska); "Attitude of Gaming Employees towards Problem Gambling: How It Affects Their Learning at an Awareness Training" (Lisa M. Bybee); "Quantitative Evaluation of the Educational Programmes on Students' Awareness of Social Responsibility" (Loky Tsui, Lee Wong); "Increasing Female Participation in Technology Education: A Hong Kcng Perspective" (Ken Volk); "Integration of General Education into the Vocational Training Curriculum" (Kwok Hung Lai); "Flexible Learning: Developing Opportunities" (Lesley Wemyss, Carmel Thompson); "Role of Supported Services in the Provision of Vocational Training for Open Employment to People with Disabilities in Hong Kong" (Eliza Woon-ching Lo Chan); "Exploration of the Aboriginal Vocational Training Implementation Strategem from the Outlook of the 'Tribal Classroom'" (Chou Chin-hung); and "Professional Ethics--A Life-long Pursuit by an Engineer" (C.K. Leung, Jolly Wong). Most papers contain substantial bibliographies. (MN)

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ED 446 244

Paper Presentations

Session A

Social and Ethical Issues

CE 080 844

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Vocational Education and Training for Life Long Learning in the Information Era

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Hong Kong

6 - 9 August 2000

ATTITUDES OF UNIVERSITY FACULTY MEMBERS TOWARD STUDENTS WITH DISABILITIES

Marie F. Kraska
Auburn University, United States

Index: Special Needs; Educational Opportunity; Social Responsibility

Abstract: American colleges and universities are experiencing a continuous enrollment of students with disabilities, especially students with learning disabilities. The Americans with Disabilities Act mandates that institutions of higher education provide full accommodations and services to all students. This study was conducted to ascertain the attitudes of university faculty members toward serving students with disabilities. Seventy-one faculty members representing three broad academic areas in a university in the Southeastern Region of the United States participated in this study. Results of the data analysis revealed statistically significant differences existed between faculty members when they were grouped by academic rank and academic unit.

INTRODUCTION

A study by Fichten, Amsel, Bourdon, and Creti (1988) found that although professors are experts in their respective disciplines, most do not feel they are experts in adapting their courses to students with disabilities. Leyser (1989) found that a large majority of faculty supported the integration of students with physical and sensory disabilities; however, they were less supportive of students with learning disabilities and emotional disabilities. The Leyser study also found that less than one half of the 124 faculty members surveyed were using the resources and support services available to assist students with disabilities.

The removal of architectural barriers on college campuses has been a primary goal of most institutions. However, as Newman (1976) stated: " . . . the barriers to accessibility on college campuses to the handicapped are not only physical . . . attitudinal barriers are at least as salient." Nathanson (1982) reported that faculty attitudes and perceptions are influenced by the amount of contact they have with students with disabilities. Nathanson found that faculty emotions, perceptions, assumptions, beliefs, and expectations all play an integral part in the faculty and student relationship. Jarrow (1987) reported that research evidence indicates that attitudinal barriers are as much a matter of what we say as they are a matter of what we do; but given appropriate support, students with disabilities can be successful in pursuing a postsecondary education.

The increased number of students with disabilities who are being served in higher education and the demands of this population make it imperative that university faculty members be prepared to serve these individuals effectively. Students with disabilities need the assistance provided by a disability services office as well as accommodations in the classroom. Faculty members within each institution of higher education have a legal responsibility to provide accommodations to qualified students with disabilities. An assessment of the current attitudes of faculty members may be helpful in planning, designing, and implementing professional development programs to prepare faculty to serve students with disabilities effectively and efficiently in the regular classroom.

Statement of the Research Problem

Students with disabilities face many of the same challenges as other students as they pursue their college studies. Some students are concerned about the lack of awareness of their unique requirements by college and university faculty members. Attitudinal barriers should not be ignored when striving to provide equal access to higher education for students with disabilities. The attitudes of university faculty members may be a significant determinant in the successful completion of educational experiences for students, with or without disabilities. The lack of information related to the attitudes of university faculty toward serving students with disabilities provided the focal point for this research.

Purpose of the Study

A review of the literature revealed no studies have been completed related to the attitudes of faculty members at small, regional public teaching institutions. The purpose of this study was to investigate the attitudes of faculty members toward serving students with disabilities at a small, regional university in the southeastern region of the United States. Attitudes were examined in relation to selected demographic variables of faculty members.

Research Question

The following research question served to guide this study.

To what extent is there a difference in attitudes of university faculty toward serving students with disabilities as measured by the Survey of Faculty Attitudes Relative to Serving Students with Disabilities questionnaire when faculty are grouped by (a) gender, (b) age, (c) academic rank, (d) academic unit, (e) years of teaching experience, and (f) extent of contact with students with disabilities?

Definition of Terms

Auxiliary aids and services—the term, "auxiliary aids and services," includes (a) qualified interpreters or other effective methods of making aurally delivered materials available to individuals with hearing impairments, (b) qualified readers, taped texts, or other effective methods of making visually delivered materials available to individuals with visual impairments, (c) acquisition or modification of equipment or devices, and (d) other similar services and actions (Americans with Disabilities Act, 1990).

Disability—the term, "disability," means, with respect to an individual: (a) a physical or mental impairment that substantially limits one or more of the major life activities of such individual, (b) a record of such an impairment, or (c) being regarded as having such an impairment (Americans with Disabilities Act, 1990).

Reasonable accommodation—the term, "reasonable accommodation," may include making existing facilities readily accessible and usable by individuals with disabilities (Americans with Disabilities Act, 1990).

Limitations of the Study

1. Only faculty members employed in one small, regional university in the southeastern region of the United States were included in this study.
2. Results were limited to the extent that faculty members responded with their honest feelings.
3. Results were limited to the extent that the research instrument measured the true feelings of the faculty members.
4. A non-response bias may have existed in the non-return rate.

Assumptions of the study

1. Responses to items on the research instrument indicated the true feelings of faculty members.
2. Faculty members had some previous knowledge of the rights of students with disabilities according to legislative mandates.
3. Faculty members had some previous experience interacting with a student with a disability in a classroom setting.
4. The survey instrument was sensitive to faculty attitudinal characteristics.

METHODS AND PROCEDURES

Sources of Data and Collection Procedures

The research instrument and demographic data form were administered to all 106 faculty members employed at a small, regional teaching university in the southeastern region of the United States. Useable data were collected from 32 full-time faculty members and 39 adjunct faculty members. The number of males and females were almost evenly divided, with 35 males and 36 females. The researcher administered the survey instrument and a demographic data sheet in January 1999 to the faculty during a faculty convocation session. Faculty members completed the demographic data sheet and the survey instrument during the convocation session.

Instrumentation

The Survey of Faculty Attitudes Relative to Serving Students with Disabilities instrument was used for this study. This is a 30-item instrument to which participants responded using a Likert-type scale with a range from 5 for "Strongly Agree," to 1 for "Strongly Disagree." Some items are written with positive connotations and some with negative connotations. Sample items include statements such as, "Inclusion of students with disabilities will require significant changes in classroom procedures" and "Inclusion of students with disabilities will necessitate extensive retraining of faculty." A score could range from 30 to 150, with a higher score indicating a more favorable attitude toward students with disabilities.

Procedures for Data Analysis

Data were analyzed using the Statistical Packet for the Social Sciences (SPSS). A one-way analysis of variance statistical procedure (ANOVA) was used to test for differences in mean scores between groups for each of the six independent variables. The .05 level of significance was used. Differences in mean scores were tested between groups when data were grouped as follows: (a) gender, (b) age, (c) academic rank, (d) academic unit, (e) number of years of teaching experience,

and (f) extent of contact with students with disabilities. Minimum and maximum scores, mean scores, and standard deviations were computed for the demographic data.

Results

No statistically significant differences were found for the following variables: (a) gender, (b) age, (c) years of teaching experience, or (d) previous contact with students with disabilities.

The F-ratio of 4.138 indicated statistically significant differences between mean scores for academic rank. Faculty members who did not hold academic rank (instructor and adjunct) had higher mean scores (Mean Score=86.69; SD=6.19) than faculty members who held academic rank (Mean Score=83.50; SD=6.80). The lowest score for the non-academic ranked faculty was 77 and the highest score was 105, whereas the lowest score for faculty who held academic rank was 71 and the highest score was 98.

The F-ratio of 4.337 indicated statistically significant differences between mean scores for academic unit. The mean score for the College of Arts and Sciences (Mean Score=88.16; SD=7.94) was higher than the mean scores for the School of Business (Mean Score=84.48; SD=5.11) and the School of Education (Mean Score=82.96; SD=5.17).

The mean score for all participants was 85.30 with a standard deviation of 6.61. The minimum score for all participants was 71 and the maximum score was 105.

CONCLUSIONS

Overall, faculty members held generally positive attitudes toward serving students with disabilities; however, academic rank and academic units were indicated as statistically significant variables related to faculty attitudes. It appeared that faculty members who did not hold academic rank had more positive attitudes toward serving students with disabilities than faculty members who held academic rank. In addition, faculty members in the College of Arts and Sciences appeared to have more positive attitudes than faculty members in the School of Business and the School of Education. Results of this study suggested that the attitudes of faculty members in this study were similar to faculty attitudes reported in similar studies at other higher education institutions (Fonosch & Schwab, 1981; Schoen, Uysal, & McDonald, 1987). In the Fonosch and Schwab study, results indicated that most faculty members held positive attitudes toward students with disabilities. Faculty members who used more than the lecture method had more positive attitudes toward serving students with disabilities than those who used the lecture method only. Schoen et al. reported that faculty members generally held positive attitudes toward students with disabilities in relation to classroom management issues and compliance with legislative mandates.

Faculty members in the School of Education held the least positive attitudes of serving students with disabilities. This may have been due to the professional stress these faculty members have experienced in recent years. For example, changes in university leadership, increased use of technology, changes in curricula, transition requirements from the quarter to semester system, renewal of accreditation, and lack of faculty input for many of the changes. The combination of countless changes may have taken away some of the concern normally shown to students. In addition, faculty members with academic rank may have answered more frankly due to the fact that they typically are tenured and may feel more secure than their non-ranked, non-tenure track counterparts. Many students transfer into the university from two-year postsecondary institutions; therefore, faculty members who do not hold academic rank may have limited contact with these students due to the fact that they usually teach entry-level courses.

Finally, faculty members in the School of Education may have indicated the least positive attitudes due to doubts that they may have relative to the ability of students with disabilities to master new material and to use assistive technology effectively.

RECOMMENDATIONS

Data for this study included faculty members at only one small, regional university campus; therefore, caution should be taken in generalizing the results beyond institutions similar to the one in this study. Additional research could be conducted at other similar universities to provide a larger data base. A larger data data base may provide a more comprehensive view of faculty attitudes.

Nathanson (1982) suggested that the attitudes of college faculty might have a profound impact on the educational and social integration of students with disabilities. Fichen, Goodrick, Tagalakis, Amsel, and Libman (1990) suggested that faculty attitudes might translate into behaviors that could either facilitate or impede the college experience for students with disabilities.

Additional research may be helpful in assessing the professional development needs of university faculty toward serving students with disabilities. For example, special training programs may help faculty members to increase their knowledge relative to the nature of various disabilities and appropriate accommodations, compliance with legislative mandates, and the use and incorporation of assistive technology into their instructional programs.

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ATTITUDE OF GAMING EMPLOYEES TOWARDS PROBLEM GAMBLING: HOW IT AFFECTS THEIR LEARNING AT AN AWARENESS TRAINING

Ms. Lisa M. Bybee

Index: Adult learning, Training evaluation, Problem gambling

Abstract: The purpose of this study: Analyze the efficacy of a problem gambling training class to train adult learners and determine whether the attitude of this sample towards problem gambling affects their ability to learn about this issue. A survey instrument was designed by the author. The researcher used frequency distribution, crosstabulations, and linear regression to analyze the collected data. The survey sample consisted of adult gaming employees in Las Vegas who attended compulsory problem gambling awareness training.

INTRODUCTION

The purpose of this study is to analyze the efficacy of a problem gambling training program to train adult learners and to determine whether the attitude of this sample towards problem gambling affects their ability to learn about this issue. The survey sample consists of adult gaming employees in Las Vegas who attended a compulsory problem gambling awareness training class.

Importance of the Study

This study will first endeavor to discover whether the attitude of trainees towards problem gambling affected their ability to learn the objectives presented in the class and second evaluate the training program. The program offered by the Nevada Council on Problem Gambling is the first of its kind in Las Vegas outside of a casino or hotel property.

Problem gambling has been a controversial topic of debate among gaming proponents and opponents for at least 15 years and has become a more politicized issue in Nevada, and other states with legalized gambling, during the past few years. Indeed, it has been difficult for interested parties (clinicians, the gaming industry, the general public, and people with gambling problems) to come to an agreement on just what problem gambling is.

The pre-test occurred at the beginning of October. Ten completed surveys were obtained. Because the responses were acceptable – no questions seemed to pose any problems – no part of the survey was changed. As a result, these 10 surveys were added to the 45 that had been collected by December. Thus, a total of 55 useable surveys were obtained with a response rate of 100%.

Hypotheses

1. Do women have a different attitude towards this training than men?
2. Will attendees with no prior exposure to problem gambling training retain more information than those attendees who have had prior problem gambling training?
3. Do people with positive attitudes retain more information than those with negative attitudes?

The study used a convenience sample. The survey sample was restricted to gaming employees in Las Vegas who attended a compulsory, off-site problem gambling awareness training

("open enrollment" option) offered by the Nevada Council on Problem Gambling. The researcher was solely responsible for administering the survey to the sample.

Review of Related Literature

The review of literature is divided into the following six parts: Background (problem gambling and an outline of the Nevada Council on Problem Gambling's Awareness Training Program); Problem Gambling; Adult Learning; Attitude Measurement; Training Program Design; and, Training Evaluation. Only the Background section is included here.

Background

In 1931, Assembly Bill 98 was passed legalizing gambling in Nevada. During November 1998, a gaming regulation was passed requiring gaming establishments to address problem gambling. The debate over just what problem gambling, or compulsive gambling, or gambling addiction really is has raged among clinicians, the gaming industry, the general public, and people with gambling problems for years. While gambling as a recreational activity has been widely practiced and accepted, problem gambling has remained a difficult issue to define and address for all interested parties.

The journey to the regulation's passage and implementation was recorded by one of the city's newspapers – the Las Vegas Sun – and revealed much about the volatility of the issue and the opinions of various groups inside Nevada. A June 1998 article discussed the 12th National Conference on Problem Gambling. Medical professionals, executives from the gaming industry, and anti-gambling representatives met in Las Vegas over three days to discuss problem gambling. It was noted that such a large and varied gathering would not have occurred a few years before. Dr. Howard Shaffer presented results from earlier research that studied underage gambling and gambling addiction among teens (Thompson,1998).

By September of 1998, the gaming industry in Nevada was feeling the pressure of a study being conducted by a federal commission – the National Gambling Impact Study Commission – studying problem gambling nationwide. The general feeling of Nevada casino operators and gaming interests was that they needed to address problem gambling issues themselves before some other legislative body intervened (Wilen,1998).

In November 1998, the Nevada Gaming Commission and the State Gaming Control Board passed a regulation that addressed problem gambling in 4 ways: 1.) all gaming properties, with restricted or unrestricted licenses, are subject to the regulation; 2.) the help-line number (1-800) has to be posted in gaming areas; 3.) employees who work in gaming areas are required to be educated about the issue and trained how to assist customers who request information; and, 4.) gaming properties must discontinue sending casino marketing information and issuing credit to customers who request it (Regulation 5.170,1998). The Nevada Council on Problem Gambling is the recognized provider of problem gambling awareness training available to gaming properties.

The gaming industry revealed publicly that it acted to pass legislation quickly, the night before a scheduled visit in Las Vegas of the federal Commission, and eight months before the results of their study were released (Wilen,1999). By May 1999, casino operators had begun to suggest that all of the controversy surrounding problem gambling and the need for recently passed legislation had been overstated. The high incidence of problem gambling in the local and general population and personal bankruptcies in Las Vegas were the result of growth, not gambling (Strow,1999).

In June of 1999, the month that the federal report's results were to be made public, gaming interests, while applauding themselves for passing the regulation, went out of their way to point to several studies which suggested that the percentage of problem gamblers in the general population was very small (Wilen,1999). The very next day Steve Wynn, casino magnate and influential gaming industry persona, commented that the results of the federal report would prove to be harmless to the gaming industry and, instead, would help to promote the industry as a financial powerhouse and economic savior of many communities and states in the country (German,1999).

One week after Wynn's comments, on June 18, 1999, the National Gambling Impact Study Commission released the results of its research. Among the highlights of the Commission's recommendations under the problem and pathological gambling section: "contract with a state-recognized gambling treatment professional to train management and staff to develop strategies for recognizing and addressing customers whose gambling behavior may strongly suggest they may be experiencing serious to severe difficulties" and "...respectfully and confidentially provide the customer...with written information that includes a state-approved list of professional gambling treatment programs" (NGISC Report,1999).

The national press commented on the events unfolding in the gaming industry as the result of the Commission's report. Overholser (1999) pointed out that, while important, the report seemed to take a soft approach to the spread of gambling nationwide due to the Commission's membership including an influential Las Vegas CEO. By the end of June 1999, the local press began to profile famous individuals who had suffered from gambling addiction – in order to put a familiar face on the issue (DiMeglio, 1999; Arnold, 1999).

It is in this atmosphere of mistrust – on the part of some in the gaming industry who believe that it was forced to regulate itself and gambling opponents who believe that the spread of gambling nationwide is responsible for the problem – that the Nevada Council on Problem Gambling began to offer its problem gambling awareness training to employees of Las Vegas gaming establishments.

Nevada Council on Problem Gambling's Training

The problem gambling training class offered by the Nevada Council is presented to class attendees in 75 minutes. An outline of the program's objectives, given to attendees at the beginning of the class, is reproduced below:

I. Introduction and Objectives
II. Defining Social and Problem Gambling
III. When the Fun Stops video presentation
IV. Impact of Problem Gambling
V. Solutions for Problem Gambling
VI. Summary and Review
VII. Quiz

(Source: NVCPG's When the Fun Stops participant handout, 1999).

Class attendees are told throughout the introduction that the training class is 75 minutes in length – something the Council states to trainees in order to reassure them that their time commitment is relatively short. The length of the video, 28 minutes, is also given to attendees at the beginning of the class. Finally, the quiz to be given at the end of the class is presented as an integral part of their attendance since its completion will allow the Council to give each participant a card signifying that an individual took the class.

The first objective of the training is to explore the definitions of problem gambling and social gambling – their differences and similarities. Next, the warning signs of problem gambling are covered. This section is designed to further separate social gambling's aspects from problem gambling's symptoms. The *When the Fun Stops* video is then shown. The video uses three recovering problem gamblers and their stories, along with a noted problem gambling therapist, Dr. Hunter, to present the issues of the training in a sensitive yet reality-based format. The phases of problem gambling are presented in the video in order to give structure to the experiences of the three individuals profiled. Following the video presentation, the impact of problem gambling on the individual, family, friends, and co-workers is described.

Solutions to problem gambling, i.e., support groups available to the public, the hotline number, and professional resources, are then given. A review of the individuals in the video, how they resolved their gambling addiction, availability of treatment, and the importance of knowing the difference between problem and social gambling is presented. Finally, after more than an hour, the role of the gaming employee is reviewed. They are to know where brochures and information – especially the hotline number – are posted in the workplace; that there exist support groups for those who ask for help; and, not to approach customers about this issue.

Class attendees are then given time to complete the Council's quiz. It reviews the basic objectives and information presented in class. The attendees are told not to view the quiz as a pass/fail test of their knowledge of problem gambling since the trainer will go over each question with the class and provide the correct answers.

Summary

Women were more interested in taking the training class than men and they responded positively to the seriousness of the issue from the beginning. The results for *hypothesis one* indicate that women may be more positive towards the training because they view the training as an opportunity to learn about a social issue.

Women may have a more positive attitude towards the training because, traditionally, they have had more personal contact with gambling patrons through their jobs at gaming establishments. In addition, the fact that half of the women answered "very interested" and "interested" suggests that their interest to learn about problem gambling is associated with their perceived social roles in the workplace.

The results for *hypothesis two* indicate an automatic response to survey questions in that those who had previous training were more likely to have responded that they had "learned little that was new" from the training. These respondents may have thought they knew all they needed to know about problem gambling due to their prior job training or personal experience. This suggests that their attitude towards the training and confidence in their knowledge prevented them from learning something new.

In addition, the way in which respondents with or without previous training responded to questions about what they learned at the training, as noted in the high response rates for "learned little that was new" and "did not learn anything new", could mean that respondents really do not know if they learned anything new about problem gambling from the training since they do not know the outcome of their efforts. These responses may also be due to the compulsory nature of the training.

The results for *hypothesis three* indicate the sample's attitude towards learning about problem gambling. Those respondents who were "very interested" and "interested" in the training at the beginning, had more positive answers for "did you learn something new" and "is problem

gambling a serious issue" suggesting their positive approach to the training influenced what they learned.

Participation in adult education is driven by several factors including employment status. In other words, respondents were at this training because of their employers (or potential employers) not because they wanted to become more knowledgeable about problem gambling. The necessity of performance feedback from the instructor, and for instructors to take into account prior experience when designing curriculum, are vital parts of the adult learning process.

In both regression models "how interested are you in this class" is a significant independent variable. This was expected since the crosstabulation results showed a positive correlation between interest in the class and "did you learn something new".

What matters more: Age, gender, previous training, or attitude? The regression analysis shows that attitude – responses to "interest" and "opinion" questions – is the variable that is the most significant for this sample.

CONCLUSION

The author's experiences at the Council's training sessions suggest that the approach to the training by the Council illustrates its desire to get its message across to participants in the shortest time possible in order to minimize the frustration (negative attitudes?) that attendees may have towards attending the training. The length of the video, 28 minutes, is also given to attendees at the beginning of the class – possibly for the same reasons. The desire to train attendees in the shortest amount of time is cost-effective but are the content and organization of the class sacrificed in the process?

While the presentation of objectives follows a paradigmatic training format one major element to teaching adults successfully is left out completely: active participation of class attendees. Although the Council would argue that this element is not possible to include due to time constraints, participation is an essential aspect of adult learning methodology. Furthermore, the use of a quiz that does little to test the newly acquired knowledge of participants might very well neutralize any actual retention of information because the trainer provides the answers for the adults and still gives a reward for their efforts (the card). The review of literature shows that this goes against the tenets of adult learning theories and training design. Adults must have a stake in their learning and must be able to show themselves and others what they have learned in order to feel successful.

The purpose of the Nevada Council's training is to increase gaming employees' awareness of problem gambling issues in compliance with a recently passed gaming regulation. Is the training successful using this as a criteria? In terms of adult learning methods, the training falls short as suggested by the lack of trainee participation and the testing of acquired skills. The training is a success when training design is considered since the objectives of the training are stated clearly at the beginning of the class and the class format is structured around the stated plan. However, the end of the class deteriorates into a last minute attempt to have attendees remember just one thing – the problem gambling telephone number. This suggests to attendees that the earlier part of the training (the phases of problem gambling, the personal devastation it causes) was not as valuable or important for them to know as a telephone number.

What makes this topic, problem gambling, provocative is that people have difficulty accepting that the pursuit of the intangible product of gambling – entertainment – can have a deleterious effect on a person. The passage of a problem gambling regulation, whatever the

motivation, and the existence of the Nevada Council on Problem Gambling's awareness training classes are positive signs that the gaming industry is committed to addressing this issue.

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DEFINITION OF TERMS

The following definitions are from various sources including the Nevada Council on Problem Gambling's informational brochure and training class handouts:

Problem gambling: General term used to describe a disorder whereby an individual is unable to stop gambling on their own. They cannot limit the amount of time or money spent gambling. They gamble to the exclusion of other activities and the end result is often financial bankruptcy, depression, and suicide. Same thing as pathological gambling, compulsive gambling, and gambling addiction. Differs from social gambling.

Social gambling: Gambling activity that is for entertainment purposes. The gambler limits the amount of time and money gambled and gambles for social distraction. How the majority of the general public gambles.

Compulsive gambling: Another term used by people who are in treatment for gambling addiction. The same thing as problem gambling.

Pathological gambling: The term used by the medical community for problem gambling. Also refers to gambling addiction. Typically used by lay people, i.e., the press and general public.

Gambling addiction: The term that "problem gamblers" use to describe their gambling problem. Typically used by those who are in treatment or post-treatment.

Gambler's Anonymous: Also referred to as GA. This is a free treatment organization for problem gamblers. The phases of the program follow the "12 Step" method used by Alcoholic's Anonymous.

Convenience sample: A population sample that is not randomly chosen.

PLEASE NOTE: A complete copy of this thesis, including tables, literature review, sample survery, and recommedations can be obtained from the author.

CORRESPONDENCE

Ms. Lisa M. Bybee

E-mail: Lmbyb@aol.com

11 Calimo Circle

Santa Fe, New Mexico

87505

QUANTITATIVE EVALUATION OF THE EDUCATIONAL PROGRAMMES ON STUDENTS' AWARENESS OF SOCIAL RESPONSIBILITY

Mr. Loky TSUI
LLB , MA in TESOL , ACCA
Previous Position: Lecturer (Hong Kong Institute of Vocation Education, VTC)

Mrs LEE WONG Sau-wan, Teresa
BEd , MA in Language and Law
Present Position: Student Affairs Officer (Hong Kong Institute of Vocation Education, VTC)

Indices: Vocational Education, Social Responsibility, and Quantitative Evaluation

Abstract: As discrimination and hazardous working conditions have been constituting social costs in the Hong Kong economy, legislative progress in enforcing equal opportunity, safety and health at work becomes obvious with the enactment of discrimination ordinances and the Occupational Safety and Health Ordinance in 1997. Educational programmes were being conducted for students to realise such social responsibility soon after they graduate. The evaluation of the educational programmes is based on the empirical data collected after the delivery of educational packages.

SCOPE

This essay attempts to quantitatively evaluate social studies as part of vocational education programmes. The evaluation is made on the students' awareness of social responsibility imposed by recent enactment of discrimination ordinances (L.N. 556 of 1996 operative on 1.7.1997 & L.N. 552 of 1997) and Occupational & Safety Ordinance (L.N. 281 of 1997).

SOCIAL STUDIES IN THE CONTEXT OF VOCATIONAL EDUCATION

Social studies search for new social development and apply sociological knowledge to practical situations (Horton 1984). As institutionalised vocational educational programmes are aimed at training employees, social sciences and humanities are included to give the future executives a well-rounded college education (Horton 1984).

In the context of vocational education, students owe a duty of care to the community whenever they acquire technical knowledge in the institute. This duty of care is the standard of the degree of care and skill that was expected to be applied with the skill of the type of person or professional that he or she claims to be (Bachner 1996). The standard of foresight of a technically trained employee is independent of the idiosyncrasies of the particular person whose conduct is in question (Bachner 1996). Social studies included in the vocational education programme serve to prescribe normative morality affirmed by the Hong Kong society.

ENFORCEMENT OF EQUAL OPPORTUNITIES AT WORKPLACE SPECIFIED IN THE LAWS OF HONG KONG

Genuine equality of opportunities is recognised as a positive action against discrimination (Malone 1993). In Hong Kong the Equal Opportunities Commission administers the discrimination ordinances. Besides promoting equality of opportunity, the Commission also works towards elimination of sexual harassment (Cap.480 s.64)

Liability of employers is vicarious that anything violating the discrimination ordinances done in the course of employment shall be treated as done by the employer, whether or not it was done with his knowledge or approval. Supervisors and professionals also share the same vicarious liability that anything done by a person with the authority of that other person shall be treated as done by that other person as well as by him (Cap.480 s.46 and Cap.527 s.34).

ENFORCEMENT OF OCCUPATIONAL SAFETY & HEALTH AT WORKPLACE SPECIFIED IN THE LAWS OF HONG KONG

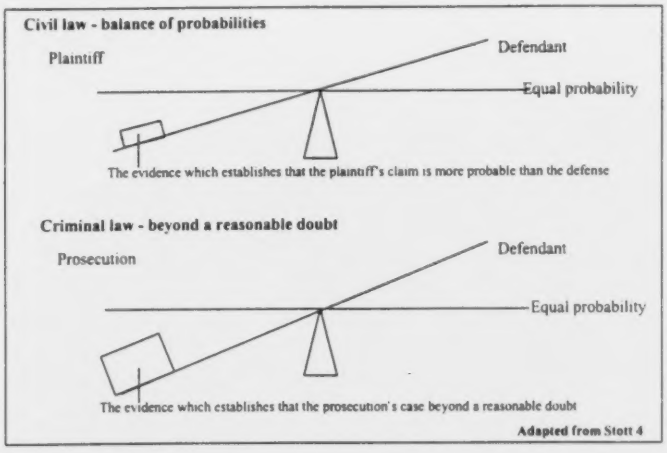
The long title of the Occupational Safety & Health Ordinance (Cap. 509) stipulates the intention of the Ordinance as follows:

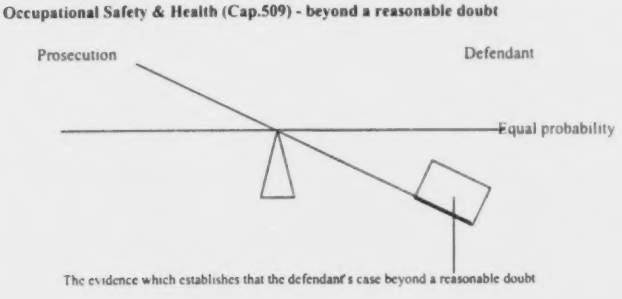
> An Ordinance to ensure the safety and health of persons when they are at work, to provide for related matters, and to consequentially amend the Factories and Industrial Undertakings Ordinance and the Administrative Appeals Board Ordinance.
>
> Long title of Cap.509 (Laws of Hong Kong)

The punitiveness from legal violation is best illustrated by citing section 38 of the Ordinance as follows:

> **Onus on defendant to prove certain matters**
>
> In proceedings for an offence against this Ordinance involving a failure-
>
> (a) to comply with a requirement or an obligation that has to be complied with only in so far as it is practicable or reasonably practicable to do so; or
>
> (b) to take steps , reasonable steps or reasonably practicable steps to comply with the requirement or obligation,
>
> the onus is on the defendant to establish that compliance with the requirement or obligation was not practicable or was not reasonably practicable,...to comply with the requirement or obligation.
>
> s.38 of Cap.509 (Laws of Hong Kong)

The following diagrams may summarise the standards of proof required by Cap.509 s.38:


Civil law - balance of probabilities
Plaintiff
Defendant
Equal probability
The evidence which establishes that the plaintiff's claim is more probable than the defense
Criminal law - beyond a reasonable doubt
Prosecution
Defendant
Equal probability
The evidence which establishes that the prosecution's case beyond a reasonable doubt
Adapted from Stott 4


Occupational Safety & Health (Cap.509) - beyond a reasonable doubt
Prosecution
Defendant
Equal probability
The evidence which establishes that the defendant's case beyond a reasonable doubt

EDUCATIONAL PROGRAMME ON STUDENTS' AWARENESS OF SOCIAL RESPONSIBILITY

The objective of the educational programmes is to enhance students' awareness of social responsibilities in enforcing a fair and safe system of work. Diagrams (see last paragraph) and sets of discussion material (see appendix) were distributed when the groups of students assembled. The task was to analyse the scenarios listed and show value judgements by marking options provided in the discussion material. During discussion, opinions were aired, information was exchanged, questions were asked and the subject matter was probed from all angles. Every member in the group speculated freely; new ideas were formulated, accepted, modified or rejected; and the previously overlooked were brought into focus and reviewed. At the conclusion of the discussion, follow-ups took the form of a summary and action along the lines of group recommendations.

Empirical data (i.e. the markings in the discussion material) were collected for evaluating the achievement of the educational objective. Hypothesis testing was carried out to evaluate the effectiveness of programmes' delivery.

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HYPOTHESIS TESTING

The statement of problem is,

"Can the educational programmes enhance students' awareness of social responsibility in enforcing a fair and safe system of work?"

The question of investigation is,

"Is there a correlation between the punitiveness from legal violation, and the realisation of social responsibility to maintain a fair and safe system of work?"

The quantitative analysis of investigation results provides solution to the problem statement. As the discussion material was so designed to draw students' attention to the punitiveness of Hong Kong Law to discrimination and hazardous working actions, positive investigation results showed that the material was effective, whereas negative results showed that the material was not effective to let students realise their social responsibility on considering the punitiveness on legal violations.

QUANTITATIVE ANALYSIS OF INVESTIGATION RESULTS ON STUDENTS' AWARENESS OF SOCIAL RESPONSIBILITY

The data tabulated below show the observed scores, n, for unlawful scenarios, from (a) to (e), classified by categories of responsible person.

responsible person	n	Scenario (a)	Scenario (b)	Scenario (c)	Scenario (d)	Scenario (e)	total	Relative frequency Pj
institute & individual		4	5	5	4	4	22	0.51
individual only		4	5	3	2	3	17	0.4
institute only		0	2	0	2	0	4	0.09
total		8	12	8	8	7	43	
Relative frequency Pi=		0.19	0.28	0.19	0.19	0.16		

Let Pij denote the underlying multivariate probability distribution whereas Pi and Pj denote the marginal probability distributions. Then the null hypothesis of statistical independence is stated that

$$Ho: Pij - PiPj$$

To test how well the data fits this hypothesis, I tabulated the 4 steps for chi-square calculations to test for dependence as follows.

Step 1

Assuming independence, the data tabulated below estimates the multivariate probabilities, Pij, which equal to the multiplication of marginal probabilities, PiPj.

Pij						Pj
	0.1	0.11	0.09	0.07	0.079	0.44
	0.07	0.08	0.03	0.05	0.061	0.34
	0.05	0.05	0.04	0.04	0.04	0.22
Pi	0.22	0.24	0.2	0.16	0.18	

Step 2

The data tabulated below calculates the expected frequencies, E, which equal to the observed scores, n, multiplied by the underlying multivariate probability distribution, Pij. (i.e. E = nPij)

4.16	4.54	3.78	3.03	3.41
3.22	3.51	1.09	2.34	2.63
2.08	2.27	1.89	1.51	1.7

Step 3

The data tabulated on the right calculates the deviations which equal to observed scores, O, minus expected frequencies, E.

(i. e. O – E)

-0.16	0.459	1.216	0.973	0.5944
0.784	1.491	1.906	-0.34	0.3684
-2.08	-0.27	-1.89	0.486	-1.703

Step 4

The data tabulated below calculates the sum of chi-squares which equals to the square of (observed scores minus expected frequencies) divided by expected frequencies. (i.e. $(O-E)^2/E$)

0.01	0.05	0.39	0.31	0.1
0.19	0.63	3.32	0.05	0.05
2.08	0.03	1.89	0.16	1.7

Sum of chi-square = Summation of the above tabulated data = 11

The overall measure of discrepancy is 11. The degree of freedom, d.f., = (no. of columns – 1) (no. of rows –1) = 8 and 11 is more than $x^2_{0.25}$ = 10.2 , thus Ho is rejected.

With reference to the group of data presented above. The result is that chi-square test establishes dependence of the punitiveness for legal violations on the awareness of social responsibilities.

CONCLUSION

If the enhancement of social responsibilities is achieved by means of learning behaviour, this change of behaviour is expected to be the result of delivering educational programmes. Evaluating educational packages by correlating scores in the mark sheets handed in right after group discussion is a valid method of determining whether the expected result is achieved. Accessing what effect the educational programmes have on students is useful and comments learnt at concluding discussion will be coupled with implementation of improvements.

APPENDIX (PP1)

Worksheet for Group Discussion (This is an English Translation)

Title: Occupational Safety & Health

Part I

Please read the following hazardous scenarios and judge what is the most appropriate deterrent action required:-

Scenario (a)

"Employ young people to clean dangerous parts of a machine"

Put a tick to the most appropriate deterrent action you think.

(5) ☐ Suspension of plant and Imprisonment of the In-charge
(4) ☐ Suspension of plant and Fine the In-charge
(3) ☐ Suspension of plant
(2) ☐ Fine the In-charge
(1) ☐ Demanding Improvement
(0) ☐ No action required

Scenario (b)

"Accumulation of a great deal of explosives and dangerous substance in the workplace"

Put a tick to the most appropriate deterrent action you think.

(5) ☐ Suspension of plant and Imprisonment of the In-charge
(4) ☐ Suspension of plant and Fine the In-charge
(4) ☐ Suspension of plant
(3) ☐ Fine the In-charge
(1) ☐ Demanding Improvement
(0) ☐ No action required

Scenario (c)

"Absence of any fencing for dangerous parts of a machine"

Put a tick to the most appropriate deterrent action you think.

(5) ☐ Suspension of plant and Imprisonment of the In-charge
(4) ☐ Suspension of plant and Fine the In-charge
(5) ☐ Suspension of plant
(4) ☐ Fine the In-charge
(1) ☐ Demanding Improvement
(0) ☐ No action required

APPENDIX (PP2)

Scenario (d)

"Absence of fire-fighting and first-aid equipment"

Put a tick to the most appropriate deterrent action you think.

(5) ☐ Suspension of plant and Imprisonment of the In-charge
(4) ☐ Suspension of plant and Fine the In-charge
(6) ☐ Suspension of plant
(5) ☐ Fine the In-charge
(1) ☐ Demanding Improvement
(0) ☐ No action required

Scenario (e)

"Gloomy lighting and insufficient ventilation in the workplace"

Put a tick to the most appropriate deterrent action you think.

(5) ☐ Suspension of plant and Imprisonment of the In-charge
(4) ☐ Suspension of plant and Fine the In-charge
(7) ☐ Suspension of plant
(6) ☐ Fine the In-charge
(1) ☐ Demanding Improvement
(0) ☐ No action required

Part II

Whom do your group think is responsible for keeping a safe system of work so as to reduce hazardous incidents?

You may tick one or more boxes.

☐ Government (surveillance and reporting to public officer)
☐ Employee (partner and colleague)
☐ Workplace in charge (employer, occupier, manager and supervisor)
☐ No one
☐ Others (specifically:_____)

APPENDIX (PP3)

Worksheet for Group Discussion (This is an English Translation)

Title: Equal Opportunity

Part I

Please rank the following discriminating scenario according to what you personally think is the most appropriate deterrent action required:-

Scenario (a)

"Purposefully speak indecent jokes"

Put a tick to the most appropriate deterrent action you think.

(5) ☐ Imprisonment of the perpetrator
(4) ☐ Fine the perpetrator
(3) ☐ Compensate the victim
(2) ☐ Make public apology to the victim
(1) ☐ Make private apology to the victim
(0) ☐ No action required

Scenario (b)

"Show insulting obscenity focusing on sexual figure"

Put a tick to the most appropriate deterrent action you think.

(5) ☐ Imprisonment of the perpetrator
(4) ☐ Fine the perpetrator
(3) ☐ Compensate the victim
(2) ☐ Make public apology to the victim
(1) ☐ Make private apology to the victim
(0) ☐ No action required

Scenario (c)

"Discomfort eyesight indicating sexual attempts"

Put a tick to the most appropriate deterrent action you think.

(5) ☐ Imprisonment of the perpetrator
(4) ☐ Fine the perpetrator
(3) ☐ Compensate the victim
(2) ☐ Make public apology to the victim
(1) ☐ Make private apology to the victim
(0) ☐ No action required

APPENDIX (PP4)

Scenario (d)

"Unwanted sexual touching or petting"

Put a tick to the most appropriate deterrent action you think.

(5) ☐ Imprisonment of the perpetrator
(4) ☐ Fine the perpetrator
(3) ☐ Compensate the victim
(2) ☐ Make public apology to the victim
(1) ☐ Make private apology to the victim
(0) ☐ No action required

Scenario (e)

"Indecent exposure"

Put a tick to the most appropriate deterrent action you think.

(5) ☐ Imprisonment of the perpetrator
(4) ☐ Fine the perpetrator
(3) ☐ Compensate the victim
(2) ☐ Make public apology to the victim
(1) ☐ Make private apology to the victim
(0) ☐ No action required

Part II

Whom do your group think is responsible for keeping a system of equal opportunity so as to reduce discrimination incidents?

You may tick one or more boxes.

☐ Government (surveillance and reporting to public officer)
☐ Employee (partner and colleague)
☐ Workplace in charge (employer, occupier, manager and supervisor)
☐ No one
☐ Others (specifically:_____)

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INCREASING FEMALE PARTICIPATION IN TECHNOLOGY EDUCATION: A HONG KONG PERSPECTIVE

Ken Volk, Ph.D.
Principal Lecturer,
Department of Information & Applied Technology
The Hong Kong Institute of Education

Index: Technology Education, Gender, Equal Opportunity

Abstract: The educational and occupational opportunities afforded females and males in Hong Kong have generally not been the same. This disparity is built on history and tradition, an occurrence that exists in many other countries. Given the impact technology has on the lives of all individuals, it is imperative opportunities are provided to increase technology literacy, skills and attitudes of each and every one. This paper describes the past and current situation relating to technology education in Hong Kong. Descriptions of the steps being taken to increase female participation in the school subject, as well as initial results of such efforts are provided.

INTRODUCTION

As stated by Fu Xuan over 2000 years ago, *"How sad it is to be a woman! Nothing on earth is held so cheap"* (Waley, 1946). Even for a modern and progressive Asian society such as Hong Kong, some aspects of society's value of half its members still rings true today. Applied in the realm of education and the resulting employment opportunities education provides, girls in Hong Kong secondary schools have long been denied access to technical subjects and steered into traditional pursuits such as home economics and commercial subjects. Such practices have serious implications for a society that desires all members be technologically literate (Hong Kong Special Administrative Region Government, 1998).

For Hong Kong, government statistics suggest that women are not as involved as men in educational programs or occupations relating to technical subjects. As noted by Lee (1996), women and men are segregated in different occupations due to a "formidable combination of gender-socialization, education, and labour market mechanisms" (p.288). These "job ghettos" typically offer low pay, no security and little chance for advancement. Lee further commented that although educational opportunities have increased for women, "human capital theory", whereby people with people with equal educational credential *should* have the same amount of human capital, is not significant to explain the persistence of gender segregation and inequality in Hong Kong.

For instance, women are more likely to be found in clerical and unskilled work, while men are found in managerial, professional and technical work. Westwood, Mehrain, & Cheung's (1995) data on the subject revealed men were, on average, over six times more represented in the latter professional areas. Further evidence can also be provided. Although women make up 44 percent of the total working population, only 26 percent of the "data processing and tabulation services category were women" (Hong Kong Government, 1997). At the Hong Kong University of Science and Technology, only 4 of 80 professors in the computer science and electronic engineering departments are women, creating a shortage of role models for women (Scott, 1998).

A HISTORY OF TECHNOLOGY EDUCATION IN HONG KONG

Given the important role education has in shaping society, the history of technology (technical) education in Hong Kong has not been stellar in contributing to opportunity or equality. With a junior technical school opening in 1932 and soon afterwards a Junior Technical College offering the subjects of pattern making, technical drawing, furniture making, metalwork, and shoemaking it was not until the early 1950s, that *any* form of technical education was available for girls. This was a technical school providing secretarial and domestic subjects. During the 1960s to 1970s, Hong Kong's educational programs began to change. The number of schools increased, schools were re-aligned, and a common core of subject matter introduced. Prevocational schools were a new concept, providing basic technical skills to around five percent of the total junior secondary students. What can be observed today are the three secondary programs; grammar, technical, and pre-vocational, with only the former concentrating on those students preparing for further university studies.

In the early 1970s a White Paper (Hong Kong Education Department, 1974) recommended a new subject of Design and Technology (D&T) as a common core subject in general education. Conceived as a vehicle to introduce technology to students in the lower-secondary grades, the subject was to move beyond the craft-based approach of traditional woodworking and metal working. Sadly, enthusiasm soon waned as the traditional approaches continued. Furthermore, despite Education Department recommendations, D&T was never fully introduced in *all* schools and to *all* students. Today, much of D&T reflects a dated syllabus, inadequate facilities, poor public perception, lack of new D&T teachers being recruited, and inability to allow a wide-range of students to fully participate in the programme (Volk, Yeung, & Siu, 1997). As is described later in this paper, new initiatives and ideas about technology education are beginning to take hold, with the subject about to be transformed.

Regarding equal access and participation in the subject, not all schools offer D&T. And even in those schools which do offer D&T, currently only a handful allow girls. Gender bias in D&T is based on a combination of cultural and structural conditions. In schools with D&T, girls generally only take home economics, as D&T is not perceived as a female subject. School principals contribute to this discrimination by their insistence to schedule students' classes based on gender (Volk, Yeung, & Siu, 1997). In short, they find it much easier for arranging the timetable. Again, just as the subject of technology is about to change, so too is the access to it!

WHAT IS BEING DONE AT HKIED

At The Hong Kong Institute of Education, where over 4,000 students are preparing to be teachers, several initiatives to increase female participation in careers relating to technology have recently been introduced. With education seen as a necessary component for societal change, proactive steps are being taken in research, teacher preparation programmes and school curriculum. The following section provides examples of the work currently undertaken.

Pupils' Attitudes Toward Technology Study

The attitudes students have about technology, whether received though parents, peers, schooling, or one's daily life experience, plays an important role in their ability to actively participate in their current and future technological world. To examine whether there are differences in Hong Kong pupils' attitudes toward technology, an instrument was administered to nearly 3,500 Hong Kong secondary school students (Volk & Yip, 1998a). Data received were used to compare girls' and

boys' attitudes toward technology and six attitude categories of: a) career options, b) schooling required, c) consequences of technology, d) interest in technology, e) technology as an activity for both boys and girls, and f) the perceived difficulty of technology.

The major results of the study on Hong Kong Pupils' Attitudes Toward Technology can be summarized as follows:

- For the demographic characteristics areas such as 'Gender', 'Will Choose a Technological Profession', and 'Have Taken D&T or Technical Subject in School', significant attitudinal differences were observed in all six attitude categories.
- Boys were found to have more-positive attitudes than girls for all attitude categories except that of 'Role Patterns'. In this category, girls had more positive attitudes than boys, indicating girls had more positive attitudes about their being able to participate in technology activities and careers.
- When both boys and girls have a 'Working Space at Home' or 'Have Taken D&T or Technical Subject in School', significant differences disappeared in several attitude categories.

Important to notice, was the effect of having 'Taken D&T or a Technical Subject' on students' attitudes toward technology being an activity for *both* boys and girls ('Role Pattern'). The gender difference was not significant when both boys and girls experienced this characteristic. In fact, the attitudes were exactly the same. What this suggests is the positive effect education, especially technical education, can play on forming *all* students' attitudes about technology.

One significant result of the study was that it acted as a catalyst for change in the program offerings in schools. With a summary report prepared, (Volk & Yip, 1998b) a copy was sent to the Equal Opportunities Commission (EOC), highlighting problems and concerns with the current practice, specifically relating to laws covering equal access to educational benefits, services and facilities. Soon the EOC examined the matter and did their own survey of practices in schools, asking principals about the subjects girls and boys were allowed to take. Not surprising, their findings mirrored Volk and Yip's, and thus began a strong push to expand school subjects. Notice was served to the Education Department that changes must occur, not only for D&T, but for Home Economics. Obvious concern and some resistance followed, with issues again centering around scheduling. In October 1999, a forum sponsored by the EOC was held at the Hong Kong Convention & Exhibition Centre to explain the required changes and discuss resource issues. It was a lively session, with many concerns raised. Nevertheless, the requirement for schools to change was not open for debate, leaving principals and teachers with a challenge to meet.

At the time of this writing, schools are slowly implementing the changes, some with mixed classes or gender-specific, while others are figured to comply in the near future. Programs have also slowly begun to change such features as the type of activities, materials used and tools/equipment. Teachers recognize the need for change and seem willing to try.

Changes in Teacher Preparation Programs

The Hong Kong Institute of Education is newly-established, combining the five former colleges of education that were located throughout Hong Kong. Prior to HKIEd's establishment in 1995, D&T and other technical teachers were prepared at the Hong Kong Technical Teachers' College. Most notable of the changes with the new Institute is the new Tai Po campus recently opened in 1997, north in the New Territories. This state-of-the-art campus houses all program areas and students formerly located in separate campuses.

As the new campus was originally planned by the Education Department before the Institute's current staff was recruited, maintaining the status quo was evident. This was demonstrated by the

original plan to have the Design & Technology facility reflect a traditional skills-centered approach. In this way, the five workshops were to include woodworking, metalworking, plastics, electricity and drafting. So unimaginative was the planned D&T facility, the drafting room included only board drafting, as computers are not mentioned in the current D&T syllabus!

The establishment of HKIEd enabled a sizable number of new lecturing staff to be recruited in the department that prepared technical teachers. One major result of this change was a re-examination of program philosophy, courses and facility needs. Soon, it was agreed that the new facilities for preparing D&T teachers should now reflect a philosophy based on subject integration, rather than segregation; new technology, rather than old; an exploration of design and creativity, rather than a simple mastery of skills, and a concern about attracting students from non-traditional sources. For the latter, this naturally included women.

Some of the resulting facility changes include a 3-D studio, combining wood, plastics and metals; a system technology lab, introducing a variety of "modular" activities for all HKIEd students as well as school children; an electronics lab containing control technology and hydraulics/pneumatics; and a graphics lab with networked computers and a variety of software. A new entrance examination was also put in place, de-emphasizing hand skills and emphasizing creativity, problem-solving and action-based learning. The examination is also used as a "recruiting tool" to familiarize those students who did not have the opportunity to take D&T in schools. So successful has been this change in emphasis and recruitment, that not only have women just recently began to enter the program, but this year, for the first time a majority of the incoming class is female!

This 2000-2001 academic year welcomes the first cohort of Bachelor of Education students who will major in D&T. This new program is designed to replace the 2 or 3 year Certificate in Education program that is being fazed out, as the government will soon be requiring an all-degreed teaching force. This BEd in D&T is built on the success of the previously revised CE, and will no doubt lead the way in the new D&T programs for schools.

Expanded In-Service Programmes for Teachers

The major initiative being carried out by the Department of Information and Applied Technology in HKIEd for in-service teachers is the biannual Science & Technology Education Conference (STEC) held each spring. This two-day conference attracts over 500 teachers to workshops designed to expand their understanding of technology. As the key to increasing primary students' knowledge and attitudes, it is imperative their teachers are comfortable with the subject. For this reason, primary teachers are strongly urged to attend, for it is at the primary years that students' attitudes between begin to differentiate between gender (Zuzovsky, 1996).

STEC's have proven to be a success, providing teachers with hands-on experience in a number of areas. For instance, there were sessions on computer applications, lasers, robotics, and even hot-air balloons! Although some of the equipment necessary to repeat such activities in their own school is not available, it is hoped the experience received at STEC will translate into examples, stories and experience the teachers can use in their daily teaching. Especially for primary teachers, it is important their positive attitudes about technology are transferred to *all* their students!

NEW TECHNOLOGY EDUCATION CURRICULUM IN SCHOOLS

Fortunately, in Hong Kong's technology programs, some changes are beginning to occur. As a result of the *Review of Prevocational Education* (Curriculum Development Institute, 1997), a new course called Fundamentals of Technology will be required of all pre-vocational students to take.

The proposal recommends that *all* students (girls included) take this subject, a radical change from the gender-biased programs that are now the norm. The course will include a variety of technology activities and topics, and will replace the outdated metalworking subjects.

New syllabi, equipment and facility designs for the existing D&T programs are also soon to be implemented. This is particularly important for the lower secondary programs, which are extremely dated and of low esteem. For the new D&T programs, features such as the increased use of information technology, computer graphics, modeling, and the use of multiple materials are being proposed. It is expected that features such as problem-based learning, a reduction in skill development, and more problem-solving activities relating to technology will be hallmark features of the new program. It is also expected greater opportunities and attractiveness to study the subject will more naturally occur. This new D&T will be implemented in the 2000-2001 academic year.

Finally, more exciting and bold initiatives are being proposed for the *entire* Hong Kong educational system, not only for the curriculum, but for school arrangement (K-tertiary), admissions, and the way teachers are prepared A series of reports dealing with the *Education Blueprint for the 21st Century* are being released (see Education Commission, 1999/2000).. One important aspect relating to technology education is the recognition of the subject as being a Key Learning Area for *all* students in *all* grades, and in *all* schools. Although specifics are still to be debated through numerous consultation sessions, it is proposed the Technology Education KLA will among others:

- Offer real, relevant and purposeful learning experiences to enhance students' understanding and capability in response to the rapid changing technological society; and
- Enhance focus on technology by integrating or modularizing subjects such as Design Fundamentals and Technology Fundamentals.

No doubt, should these proposals be put in place, increased female participation in Technology Education and future careers relating to technology will naturally occur.

WHAT NEEDS TO BE DONE

One major area that still needs to be addressed is the way and manner technology education is taught or encouraged in *all* schools, not just in Hong Kong. As space precludes extensive discussion, the following are only suggestions, based on the author's work in the area:

- Classroom Dynamics: Basic point is that men and women (boys & girls) act differently in classroom situations. A teacher must recognize and encourage participation and questioning. Also, create a sense of "community" within the classroom.
- Reduce Competition: Low morale often results from a competitive environment. Use collaborative work, encourage pass/fail options.
- Consider Alternate Assessments: Give encouragement, and eliminate the grading curve.
- Fight Stereotypes: Obviously remove stereotypes to ability, careers, etc. No sexual references or jokes can be tolerated, even in all-male settings.
- Expand Outreach Programs: Programs such as the Technology Adventures Program, initiated by the author while at East Carolina University (Volk & Holsey, 1996), can be used to recruit females and/or provide role models for their future career options. TAP was a two-week summer program in high technology for secondary school girls. Each summer, around 40 girls would be exposed to hands-on activities conducted by female lecturers. Counseling was an integral part of the program, with the hope of increasing positive attitudes and motivation.

CONCLUSION

This paper has presented some of the important and relevant issues relating to increasing female participation in Hong Kong's technology education programs. No doubt, that given the tradition of education and stereotypes that exists in Hong Kong, there is much work left to be done. Hopefully through some of the initiatives outlined and proposals being made by the education bodies, more fruitful results will soon emerge!

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CORRESPONDENCE

Ken Volk, Ph.D.
Principal Lecturer,
Department of Information & Applied Technology
The Hong Kong Institute of Education
10 Lo Ping Road, Tai Po, Hong Kong
Phone: (852) 2948-7710
Fax: (852) 2948-7726
e-mail: kvolk@ied.edu.hk

INTEGRATION OF GENERAL EDUCATION INTO THE VOCATIONAL TRAINING CURRICULUM

Kwok Hung LAI
Student Affairs Officer
Hong Kong Institute of Vocational Education(Morrison Hill)
Vocational Training Council

Index: General education, seamless learning experience, curriculum integration

Abstract: As our economy is moving towards knowledge-based post-industrial era, graduates need to re-equip themselves to meet with rapidly changing expectations of employers and society. Vocational education institutions also need to provide a seamless learning experience to students and enhance their lifelong learning abilities. General education should form an integral part of the total education experience, instead of ad hoc extra-curricular activity. It should be well integrated into the existing vocational training curriculum. This paper discusses the arguments for such grounds and suggests how this can be implemented.

INTRODUCTION

Due to the structural change in the economy, nine years' basic education in Hong Kong is not sufficient to prepare for a smooth transition of the 16- to 19-year-old school leavers to employment. According to the experiences of many OECD countries, vocational training programs in the last two decades are unsuccessful to lower their high unemployment rates (see Lo, 2000). Hong Kong is currently experiencing difficulty in youth employment due to a similar structural change. In terms of unemployment rate, persons in the 15 – 19 age group were hardest hit, with a high unemployment rate of 27.6 per cent, against the overall rate of 6.1 per cent (Census and Statistics Department, 1999: FB8). However, at the same time, a large number of IT job vacancies are currently unfilled because of skill shortages. Structural change in the economy is believed to be the intrinsic cause of unemployment, especially after the Asian Financial Crisis (Chan, 1999). Markets are global by nature, and the Hong Kong SAR must move quickly if it is to take, and keep, its place at the forefront of the information age. Failure to do so will carry a heavy price in terms of growth and competitiveness.

CHALLENGES OF THE KNOWLEDGE ECONOMY

Hong Kong's economy is moving towards a "knowledge-based" post-industrial era, where workers are expected to be intellectual (see Ho, Denny 1999; Chung, 1999; Cheng, 2000) to survive in the E-cultural Revolution (see Kanter, 2000). Today's jobs will be relics of the past as traditional jobs "disappear". The present concept of work has its origin in the 18th and 19th centuries when growing companies and bureaucracies in the industrialized countries had to divide work in differentiated tasks to get things done. Due to globalization and increasing competition, work will take the form of tasks or projects which requires new technological skills as well as the 'skill' of finding and doing work in a world without clearcut and stable jobs, but emphasis in deregulation and flexibility, as new technologies can spring up tomorrow, making those of today obsolete overnight.

Employers nowadays emphasize the need for employees who have good personal and social skills, together with any technical 'know-how' which may be required. Employees are expected to be able to work in a rapidly changing environment, to engage in 'rule-making' rather than just 'rule-following' behavior, to work in project teams, to communicate well with colleagues, and to share the same 'personal chemistry' as others in the organization (see Brown & Scase, 1994). High school leavers are also expected to have general knowledge of work requirements and a good working attitude, but the present curriculum in Hong Kong only prepares pupils for academic studies and does not equip them with general skills and knowledge for work (Cheung & Lewis, 1998). Past researches further reveal that Hong Kong students are very pragmatic, instrumental and focusing on study-related matters rather than social life on campus (Kwan & Ng, 1999; Lai, 1999b; Pomfret & Lai, 1999a). Such discrepancies should be dealt with in the new millennium to respond to societal and employers' needs.

Mass education that was created for an industrial era is not satisfactory for the approaching information era, as the traditional educational systems have not kept pace with ongoing changes in societies in terms of new technology and the production of new information, as well as economic and social changes in a world rapidly experiencing global interdependence (see Parrott, 1998). The prevailing conception of knowledge as an external entity is breaking down. Knowledge is considered as internal and subjective, closely connected to the learner and the situational context. So, the existing bureaucratic system of administration is incapable of meeting the needs of the education system in the 21st century as traditional emphasis on acquiring information is being replaced by a focus on learning to learn and on the ability to use knowledge (Murphy, 1999).

As proposed in the recently published *Education Blueprint for the 21st Century* by the Hong Kong Education Commission (1999), it is clearly stated that "learning should be focused upon students' personal development and is not limited to school subjects or examination syllabus. Students should have a comprehensive learning experience through the formal, non-formal and informal modes." We must ensure that our students are fully equipped for the knowledge economy of the 21st Century by expanding their access to education and training. A fundamental overhaul of Hong Kong's education and vocational training system is needed to meet the community's changing needs (Commission on Strategic Development, 2000). Recognizing that vocational competence is no longer a sufficient quality to enable diploma and certificate graduates to meet the challenges posed by the millennium 2000, vocational training institutions must get away from traditional subjects and old method of rote learning that are not relevant in the information age. Besides, to attract and retain the best and the brightest talent to maintain a competitive edge, one of the main strategies of vocational education reform is to strengthen general education and to integrate it into the existing vocational training curriculum, instead of being antecedent to or concurrent with professional education (see Zlatic *et al.*, 2000).

As universally accepted, education benefits the individual in ways not only related to jobs or work but in ways that enhance self-discovery, self-fulfillment and the acquiring of knowledge, ways that enable one to be a responsible citizen at an international level. It is necessary to integrate socially-useful productive work with general education in the academic stream to equip all students with certain elementary skills. So, in addition to work skills, students must also develop diplomatic skills, an appreciation of differences (Sabo, 2000), recognize personal inadequacies through life-long learning and workplace re-training after graduation. General education, thus widens the students' scope of knowledge and develops a global sense. In fact, in a recent survey of graduates of the Hong Kong Institute of Vocational Education (Morrison Hill), quite a significant proportion (77.3%) of the respondents "strongly agree" or "agree" to incorporate broader training, such as leadership skills, knowledge of world-wide issues, interviewing and presentation skills, problem-solving techniques, etc. into the curriculum (Pomfret & Lai, 2000).

GENERAL VERSUS SPECIALIZED EDUCATION?

To achieve ever increasing excellence of performance and service that completely satisfy both internal and external customers by meeting their explicit and implicit expectations,[1] and to "provide a better physical and learning environment to attract able students foster their total development"[2] through improving and expanding student facilities and services to enrich campus life",[3] the restructured Hong Kong Institute of Vocational Institution (IVE) organizes general education in her nine campuses to enhance a balanced development of students' moral, intellectual, physical, social and aesthetic capacities in an ever-changing world. These programs aim at broadening students' horizons, widening knowledge of liberal arts, sciences and humanities, fostering their rational inquiry and independent thinking, and inculcating sense of personal and social responsibilities,[4] and providing them with an enriched perspective from which to examine and appraise personal, professional and social issues. The content of the programs includes civic awareness development, Chinese and Western culture, social participation, thinking methods, understanding of society, etc. through the use of open forums, workshops, group projects, visits, and community services. Students are encouraged to develop their talents in areas other than academic and professional fields. All first-year full-time students are expected to participate in a minimum of six sessions of general education as extra-curricular activities in order to satisfy the requirement to obtain certification, which is not a prerequisite for promotion or being recorded in the testimonials. For students who regard technical education just as an investment for better job opportunities instead of total education, existing policy gives no incentives for them to get involved in general education as extra-curricular activities. For the first year of implementation, only 25% of all first year students are awarded with the full certificate in the Morrison Hill campus. On the contrary, general education (or courses existing of similar nature) forms part of the curriculum and is a requirement for graduation in other tertiary education institutions in Hong Kong.

What role does general education play in the vocational education realm? Stereotypically, the "meat" of vocational education is the technical training which lies in the hands of the academics, who tend to students' cognitive and skills development, while student affairs personnel minister to the affective growth or the "soul" of the students (see Zeller, 1997: 10). As "managers" of the out-of-class experience rather than as educators, student affairs personnel pay attention to the so-called co-curriculum, student activities, affective or personal development or simply the "non-cognitive" part in the whole education of students. In the newly formed IVE, general education, being formalized as part of the student affairs realm, is expected to play supplementary, secondary or "para-education roles" to enrich the narrowly and increasingly specialized technical training curriculum by providing both a common core of knowledge and a breadth of knowledge and skills (see Kanter *et al.*, 1997: xxi-xxii; Papish, 1999). Is the present arrangement the best means to increase effectiveness with few resources? If we think that our traditional vocational training curriculum is too "narrow" for our students today, then the planners can simply widen the curriculum and incorporate broader training elements into the existing core modules?

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[1] Total Quality Management and Continuous Improvement (TQM & CI) concept as outlined in *Total Quality Improvement: A Quality Policy dedicated to all staff within the VTC* (*VTC Quality Policy*)

[2] Goal 3 of the seven main Goals which enable the VTC to implement its Mission

[3] one of the VTC Strategies to achieve Goal 3

[4] Please refer to Lai (1996, 1997, 1998, 1999a) for a detailed analysis of the development of civic education in colonial Hong Kong as well as the implications on student affairs services in tertiary education.

SEAMLESS LEARNING EXPERIENCE

The very notion of the definition of a good teacher has changed in the last decade by adopting or promoting a more holistic notion of what it means to teach well. Parker Palmer (1998: 11), one of the pioneers in this line of thought, views teaching within the context of building learning communities, that "the courage to teach is the courage to keep one's heart open in those very moments when the heart is asked to hold more than it is able so that the teacher and students and subject can be woven into the fabric of community that learning, and living, require". What Palmer emphasizes is the so-called seamless learning experience, and educators and administrators need to establish truly collaborative effort to analyze, strategize, and implement programs which require a unified effort to build learning communities (see Lamadrid, 1999).

A recent study of Papish (1999) further confirms the beliefs that academic and student affairs are polar opposites (Blake, 1996) or that there is little readiness for cooperation (Hintz & Stamatakos, 1978) are not supported. Student affairs professionals should advocate and facilitate seamless learning environments, featuring collaboration between academics and administrators for the benefit of students. In the Morrison Hill campus, collaboration has occurred via standing committees, counselling services, career planning and placement, students' financial aids and welfare, students' scholarship award and presentation, student activities, community functions, such as blood donation and most recently, in a survey of values of teaching staff.

The whole educational experience is becoming widely accepted, where academic and extra-curricular activities, campus facilities and social interactions all play an important part in a successful educational programme, leading to academic achievement and all round development (Pomfret & Lai, 1999b). Thus, general education, as part of the whole educational experience instead of just extra-curricular activities, should be integrated into and be part of the vocational training curriculum.

MODES AND STRATEGIES OF INTEGRATION

Inter-disciplinary teams can be formed so that collaborative efforts of integrating general education and professional abilities in the areas of critical thinking, time management, leadership, presentation skills, communication, project management, team work and meeting management skills, and ethical decision-making abilities within the contexts of different disciplines of studies and to give relevance and currency to course materials. Efforts to change general education concern the whole institution and inevitably entail disagreement about the content, structure, and philosophy of what should be done. Those involved in this change process should adopt an attitude of welcoming conflict and looking for ways to negotiate differences. Because academic departments have a good deal of autonomy in how they allocate their time on core modules for their students, integration of general education into an existing curriculum requires thorough discussion and mutual understanding, compromises as well as an open attitude towards a common goal of what should be taught to students. In fact, much of the content of general education requires interdisciplinary efforts to be successfully implemented. Coming up with a design is only the first step to change. The real work of general education takes place after a proposal has been accepted, when deciding on the details and making resources available are crucial. Some programs may require a joint effort of current teaching staff and the student affairs officers to implement them. Others may need a re-deployment of existing staff to conduct. When considering whether to deploy existing academic staff or involve solely the student affairs officers to conduct general education course or a joint effort of these two disciplines, respective departments concerned need to know how involvement will affect them. This is a crucial issue. The

period of early implementation is an especially fragile time for changes. Departments that participate in it need to be encouraged and rewarded and staff teaching in general education courses should be evaluated and considered in tenure and promotion decisions (see Kanter *et al.*, 1997: 130). A thorough evaluation of the integration or changes should begin at implementation, before problems become insoluble and errors become institutionalized. Evaluation should be seen as part of an ongoing process of assessment and reform of general education.

CONCLUSION

Along with the growth of mass education, rapid expansion of university education before transfer of sovereignty, decline of manufacturing sector, along with the recent development of community colleges offering associate degree courses, vocational education suffers a surfeit of predictions, warnings, and labels. Institutions are expected to adapt to changes in the labor market and to respond to societal needs out of tight budgets and intensified competition for resources. Vocational training institutions, such as the nine campuses of the Hong Kong Institute of Vocational Education, should consider redesigning their curricula to meet a range of educational goals, from producing educated para-professionals who can function in the global economy, to addressing learning styles by adding teamwork and experiential activities to more traditional and structured lecture formats. At the same time, it is necessary to improve the quality of teaching and eliminate a culture of "low expectations" or an image of being a "no-choice substitute."

The continuous structural changes have increased the importance of up-to-date skills and competencies, calling for the development of effective strategies for lifelong learning. General education is providing students with a base for lifelong learning after graduation. The basis for employability is now broadening. Productive work habits, personal confidence, decision-making skills and a commitment to learning are becoming as important as specific vocational skills. To improve the employability of all students, most education and training systems are trying to reduce the traditional separation between vocational education and academic or general education (McKenzie & Wurzburg, 1997/1998). Since total and lifelong education is both an organizational goal and a global trend, general education should be regarded as an integrative part of this total educational experience.

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CORRESPONDENCE

Kwok Hung LAI

Student Affairs Officer

Hong Kong Institute of Vocational Education

(Morrison Hill)

Vocational Training Council

Hong Kong

6 Oi Kwan Road, Wanchai,

Hong Kong.

Telephone No.: (852) 2835 8398

Fax. No.: (852) 2575 7102

E-mail Address: khlai@vtc.edu.hk

FLEXIBLE LEARNING: DEVELOPING OPPORTUNITIES

Lesley Wemyss

Lesley Wemyss Training Consultancy, Australia

Carmel Thompson

The Southern Cross Connection, Australia

Index: Flexible Delivery, Indigenous Australians, Culturally Sensitive Interactive Delivery, Access & Equity

Abstract: The delivery of training in a culturally sensitive, flexible manner is vital to achieve positive outcomes when training indigenous people. Within this paper I will examine many of the do's and don'ts when delivering culturally sensitive training. Case Studies will be presented where practitioners can work together and determine how delivery can be adapted to promote cultural sensitivity. From delivery to the outcome of flexible delivery. A range of outcomes from the Case Studies will be presented and evaluation techniques and evaluation instruments will be discussed at the reaction and learning level.

INTRODUCTION:

In summary this presentation will move from examining culturally sensitive flexible training methods to learning new evaluating strategies. Both will ensure that informed learning and positive outcomes take place.

> *Nothing remains forever what it was. Everything is on the move. Everything is transformed by nature and forced into new paths. One thing withered by time, decays and dwindles. Another emerges from ignominy, and waxes strong. So the nature of the world is altered by age.*
>
> Roman Poet, Lucretius (2000 years ago)

We are wise to observe these words and reflect on them for the purpose of education and training and with special reference to the delivery of vocational training in remote locations to Indigenous people.

Cultural sensitivity is arguably one of the most topical and controversial issues today. Culturally sensitive training is however a must when delivery training to Indigenous groups across any vocational skills area. Access and Equity principles state that people with cultural and linguistic backgrounds other than those of the dominant group, should be accommodated in the provision of training services.

In the delivery of training to remote indigenous communities there are many different issues that have to be resolved and considered. These include the distances needed to travel, the appropriateness of Courses and trainers, resources, interactive delivery methods and the ability to think intuitively.

Finally but importantly, culturally sensitive delivery.

Background Data:

Just under 3% of the population of Queensland are Aboriginal and Torres Strait Islander people, with a sizeable proportion of that population residing in remote areas of Queensland. Transport and other costs related to geographic remoteness add to the cost of food, housing, infrastructure and service delivery. Additional social issues, range from poor health, lack of adequate housing, school retention rates and so on.[i]

According to the 1996 Census, the rate of unemployment for Queensland's Indigenous population was approximately 23%, excluding indigenous people on special projects, it rises to 35%. Queenslands overall unemployment rate was 9%. Youth unemployment for the same period was 45%. In addition, only 18% of the State's indigenous population aged over 15 years had completed year 11 or 12.[ii] Therefore the lack of sustainable economic employment and business opportunities for indigenous people in the State, means that around 47% of Queensland's Indigenous population aged 15 years or over, had an annual income of $10, 000 or less.[iii]

Another grave area of concern is that there has been an enormous upturn in prisoners in Queensland. Some five years ago there were approximately 2300 prisoners in custodial centres. In starkest terms the prison population has more then doubled in a period of five years with 4780 prisoners in the custodial correction system and close to 21,000 in the community corrections system.[iv] A large 24% of these are Indigenous. What happens when these people are released? Well this will no doubt be the subject of another paper.

It is well recognised by the Queensland Government that improved education leads to higher levels of employment opportunities.[v] The main deficits that have been determined

are: high innumeracy rates,

poor spelling and comprehension rates,

high skills deficits, particularly in the areas of plant operators and trade skills

Scope of Training Delivery:

Our programs range from life skills to Management Training through employment related Vocational Education and Training to Traineeships and Apprenticeships to training program development, and delivery to overseas students. The majority of our work has a community focus, and it is not just about education, narrowly defined in quantifiable outcomes, but about the development of pathways and opportunities for indigenous people.

The scope of our registration is broad (28 Vocational Areas up to Advanced Diploma) this extensive range of Courses enables our clients to access a high variety of skills training across many competencies. Just as importantly is our philosophy that Education is for all, and we deliver Training "Anywhere, anytime." We currently deliver training from the remote isolated islands in Torres Strait down through the gulf communities, out to Mt. Isa across to Cairns and surrounding regions, then down the Coast, in Townsville, Mackay, Rockhampton, out to Emerald, Gympie, Toowoomba then throughout Brisbane and surrounds down to the Gold Coast and into N.S.W. (see attached Diagram 1-Map of Queensland). Now also to overseas students. We cover an area of some 1.8 million square kilometers in our scope of training delivery, currently.

Culturally Sensitive Training:

Lesley Wemyss Training Company has developed strategies and benchmarks in the delivery of culturally sensitive training, these are:

- Culturally appropriate language and setting for training.

- An understanding of the basic protocols for consultation, negotiation and participation with Indigenous.
- An appreciation of diversity within the Indigenous communities.
- And a manner respectful for the understanding of culture, people, history and land.

There are a number or do's and don'ts with regard to culturally sensitive delivery. Contained within the 'do' list are the following:

- Priority number one is to select the right trainer.
- Select the appropriate learning materials.
- Learning must be interactive.
- There should be two-way learning i.e. equal priority to European and Indigenous knowledge.
- Do not set-up individual competitiveness, it is not conducive to Indigenous learning.
- Provision of specific Literacy and Numeracy support where required.
- Sensitivity to family / tribal structure – family commitments and natural shyness.
- Awareness of the collaborative learning styles of indigenous.
- Consistency of training staff.
- Positive relationship development between learners, trainers and family.

Conversely there are a number of don'ts that need to be taken into consideration as well:

- Thoughts taken and expanded from the Torres Islander Academic, Dr Martin Nakata, that while being aware of cultural sensitivity is a good thing – it should *not* be at the expense of outcomes.
- While visual and oral modes are often the most successful modes for Indigenous learners, do *not* preclude the use of texts, in other words don't bypass texts if they are necessary for the outcome.
- While we know that Indigenous learn best by the collaborative process and don't like to be individually competitive, be careful that in following this learning style, that they will not cope with, or even access the individually competitive world of higher education or employment.

What Are the Major Ways Education for Indigenous People can be Effective:

- Establishment of effective arrangements for the participation of the community members/family members in decisions regarding training, delivery etc.
- Increase the number of Indigenous people as educators or engaged in the education process.
- To increase the opportunities for Indigenous people to be administrators.
- Choice (as to providers).
- That all remote schoolchildren have choice and access to education.
- Access for all Indigenous to further post-school education at home or away.
- To support the cultural needs of Aboriginal people within the education cycle.
- To provide community education and support to uphold their needs.
- To have 'sufficient' LLN skills for the goals that they wish to achieve.
- For all Indigenous students to have an appreciation of their history, culture and identity in the past, today and in the future.

- To ensure that all Australian students, especially the young, have an understanding of Aboriginal history, culture, identity and place in our history and our present.

"Perhaps the greatest dangers are those of arrogance, complacency and the ability to defend that arrogance and complacency. An acknowledgment of inadequacy is a prelude to change. A defence of arrogance is a denial of any need to change." (Edward de Bono " I am right you are wrong")

What we always need to do as educators is think, re-think and be creative.

"We are locked into our institutions and structures as we are to our beliefs (about education, Indigenous etc.). The paradox is that as we move forward into the future there is more need for change then ever, yet there is less room for change because everything is locked into positions." (Edward de Bono)

We are moving into a new millennium where we have not invented the jobs we need the training for in the next few years. How is it that we can't come to terms with being flexible in our delivery and tailoring it directly to the needs of the client?

We can go to the moon, but we can't predict tomorrow's weather – is this because we are better with static systems where the variable does not change? i.e. not what humans are!

In the following Case studies, we (as a Company) have outlined what we were presented with and how we managed the situations. (see attached)

I pose the following questions:

In Torres Strait:

- How would you initiate training and organise the first visit?
- How would you advertise the Course (Workplace Trainer)?
- Who would you send?
- How would you advertise the Traineeships system and organise this in the community for further training?

In a Mine in far North Queensland:

- What would be the first move to deliver the training?
- How would you turn around the negative training culture?
- What would be the first steps in planning the training for the Indigenous coming into the mine i.e. LLN needs, Skills needs and Career pathways.
- How do you ensure that training will be continually monitored and successful?

Now for the big picture – how does education work in the workplace – we will examine some specific examples.

Evaluating Training

As the training dollar is tied directly to outcomes i.e. work or further training, there has to be accountability. However it is sometimes rather contradictory to the outcome we, as trainers, are looking for, that is, skills or knowledge transfer and hopefully an attitude change.

'...It is also recognised that the problems (Australian) Indigenous face (in relation to outcomes) are exacerbated by their low skills, insufficient education and training and often long lengths of unemployment' (Prepared by Senate Employment, Workplace Relations, Small Business and Education Reference Committee, March 2000). So as a result often over training has to also deal with transference of skills, knowledge, self-esteem, confidence and job search skills. How does all this get measured and evaluated?

If we go back to the principles of Workplace Training then we can measure our success in skills and knowledge transfer and attitude change through using the techniques of maximum reaction and learning level for each participant.

Using the model of Staged Evaluation:

I'll do it	⇨	Demonstrate skills / knowledge
We'll all do it together	⇨	Set project
You do it yourself	⇨	Set project while you're away
Do it again for over learning	⇨	Track Participants

Training delivery should meet the appropriate outcomes of the local employment market and always be evaluated against these. Outcomes should be relevant to the community or remote situation in which the participants live. Training should benefit the whole community from which the participants come.

We try to adopt a two-way or both-way teaching methodology, which allow for the best of both cultures to be combined in the development of our training delivery.

In general evaluation strategies should meet the assessment guidelines of the training Unit, but as well incorporate the underpinning knowledge. However important in the evaluation process is the application of contingency skills and problem solving in other situations outside the original learning. This is where the stayed evaluation process is so important not only for reinforcement of the learning but the measurement of learning levels.

Our success in delivery is due to the application of these strategies, as well as our ability to be flexible in our delivery and evaluation methods.

Conclusion

We have achieved some great results with our vocational training delivery to remote Indigenous Australians, highlighted by two of the case studies presented. However, we recognise there is a long way to go, there are no easy or quick solutions, only a flexible and sensitive strategy is needed.

Let us say that training is akin to following a fenced path, with many twists and turns, in order to reach a predetermined goal at the end of it. With this in mind we ensure that the Vocational Education we offer to Indigenous people offers equity, cultural sensitivity, choice, support and diversity as well as opportunities which is a great deal more then simply education for Indigenous.

Indigenous people need to be in control of their own destinies and if we white people are to be a positive part of this then they must stop trying to manipulate and control and start to listen and learn. We need to be receptive to and appreciate the richness of Indigenous culture. We need to ensure skills transferred will be current and relevant to the job market. We need to think right outside the 'box' and train for today's and tomorrows skills.

If you find that these ideas have no value for you – give these ideas to someone who needs them as much as you do.

It is against this background that we deliver training in remote Queensland.

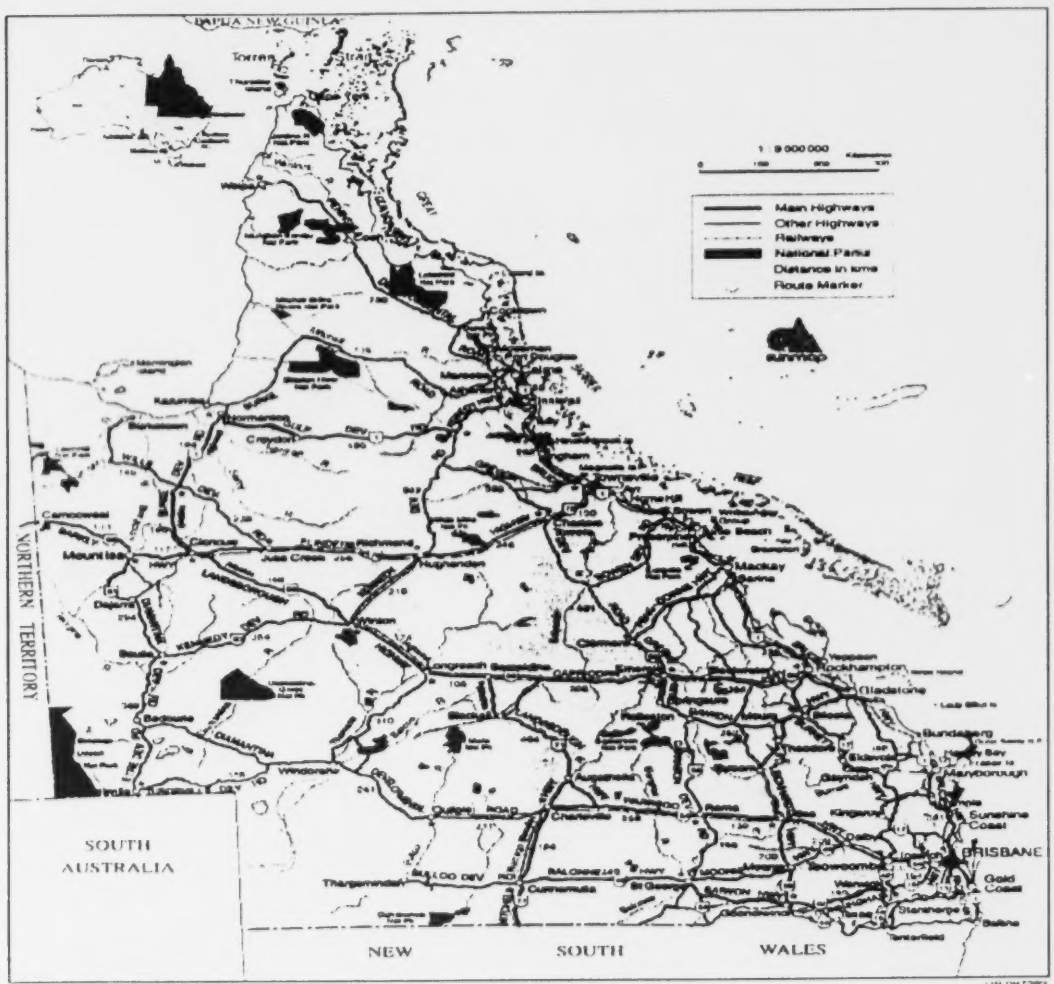

Diagram 1 : Map of Queensland

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Setting: The Gulf of Queensland – the Pasminco Century Zinc Mine

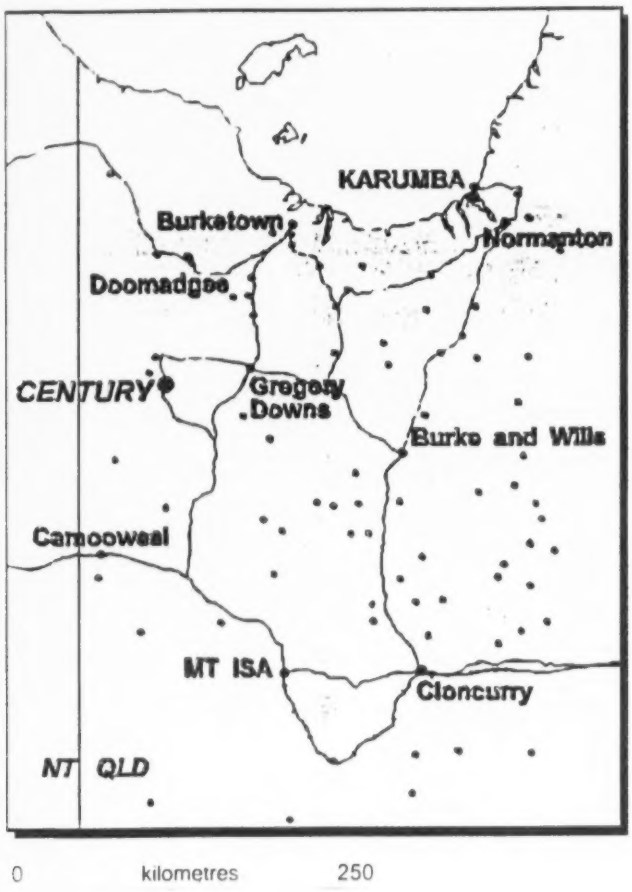

Diagram 1 - Map of the Gulf Communities

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ADDENDUM

Authors Detail:

- **Author:** Lesley Wemyss
- **Company Name:** Lesley Wemyss Training Consultancy
- **Postal Address:** 15 Sixth Avenue, PALM BEACH Qld, Aust. 4221
- **Email Address:** lesley@lesleywemysstc.qld.edu.au
- **Telephone No:** 61 7 5534 1850 61 419 824 902
- **Fax No:** 61 7 5534 7870

- **Co Presenter:** Carmel Thompson
- **Company Name:** The Southern Cross Connection
- **Postal Address:** 21 Worley Drive GILSTON Qld Aust. 4211
- **Email Address:** carmel@odyssey.com.au
- **Telephone No:** 61 7 5527 2001 61 403 218 999
- **Fax No:** 61 7 5527 2551

ROLE OF SUPPORTED SERVICES IN THE PROVISION OF VOCATIONALTRAINING FOR OPEN EMPLOYMENT TO PEOPLE WITH DISABILITIES IN HONG KONG

Eliza LO CHAN Woon-ching

Tuen Mun Skills Centre/ VTC, Hong Kong

Index Words: Vocational training / people with disabilities / job placement / work trials handicapped / supported service.

Abstract: The performance indicator for training for open employment is on how successfully the trainee is being employed in a job. Other than providing the job skills required which was always the emphasis in the vocational training, there are other issues, equally important, that should be addressed to prepare the trainees to enter into the competitive open job market. Independent and social skills should be strengthened through programmed activities. Attention should also be paid to minimize the mismatch between skills training and job opportunities to the trainees. Based on the provision in the skills centres for the people with disabilities aiming at training for open employment in Hong Kong, this paper identifies the areas and shares the experience of how the support service is rendered to enhance the employability of the trainees.

INTRODUCTION

Vocational rehabilitation of the people with disabilites is part of the continuous and co-ordinated process of their rehabilitation; which involves the provision of vocational services, such as *vocational guidance, vocational training and selective placement*. These enable them *to secure, retain and advance in suitable employment* and, thereby, to further *their integration into society*. To this end, *dedicated or special training* is provided to *increase their knowledge and skills* so that they are *better equipped to apply for a job in the open market*. Facilities for *re-training* are also provided so that people with a disability can *update their skills and knowledge* in line with modern *technology* (Rehabilitation Paper, 1995). Currently, there are about 150,000 disabled people in Hong Kong. They indeed represent *a strong workforce*. The *demand for vocational rehabilitation and training* in Hong Kong in 2000/2001 is projected as 1115, and met by five skills training centers, including Hong Chi Pinehill Village Advanced Training Centre and Caritas – Lo Mo Skills Centre (Rehabilitation Programme Plan, 1999).

Tuen Mun Skills Centre is operating under the auspices of the Vocational Training for the Disabled Section in the Vocational Training Council. Our goal is to provide effective services in the vocational training for the disabled aged over 15, and to equip them with *employable and remunerable vocational skills, as well as independent living and social skills* for their *subsequent open employment and integration into the society*.

THE VOCATIONAL TRAINING & REHABILITATION

The Structure

The Vocational Training Council provides vocational training programmes and support services for people with disabilities via its three Skills Centres, namely Tuen Mun, Kwun Tong and Pokfulam. They work for people with disabilities of the top calibre for their *vocational rehabilitation and training*, and providing them with a range of comprehensive multidisciplinary professional services, enabling them *to match their abilities and interests with the job requirements of the open employment market*. A total of 850 full-time training and 300 boarding places are offered.

The Disability Discrimination Ordinance (Cap. 487), the government *Rehabilitation Programme Plan and the Advisory Committee* (Rehabilitation Paper, 1999), reinforce the services and allow the people with disabilities to have an *equal opportunity* as their human right in *accessing to education, training and learning resources; together with a right to work, to earn a decent livelihood, gaining self-esteem, and serve the community* as an ordinary citizen of Hong Kong; *instead* of being *a social burden/expenditure. Promotion, marketing and public education* to motivate people with disability to seek employment, and employers to offer them jobs, are also promulgated, at the same time, by the Marketing Consultancy Office (Rehabilitation), government, non-governmental organizations and private sectors to the public.

Our *human resources management and strategies* encourage the services provision by the dedicated multidisciplinary professional staff, working under the learning paradigm and responsiveness to changes, with the *appropriate aptitude and culture to care and concern for the disabled intrinsically; developing, guiding, nurturing their vocational skills as well as facilitating their character built-up, personal and career growth* for *preparation to open employment* and *integration as an independent worker* in the society.

The Content of Vocational Training and Rehabilitation

Our Centre provides a comprehensive range of full-time, part-time evening, short and modular courses at operative and pre-craft level to match the interests, abilities, needs and aspiration of the trainees/ parents; and *gearing to the needs of the industries and trades in the employment market e.g. in servicing, printing and commercial sectors etc.* The operative level courses are for duration of two to three years, with one-year to two-year basis for the pre-craft level courses, whereas other short or modular courses may be ranging from one to six months. A *flexible instructional approach* developed by the *International Labour Organization*, known as the *"Modules of Employable Skills"*, is practised in the Centre. This has been proved to be effective, in training the people with disabilities in developing their abilities and potentials, (through *breaking into essential learning elements and modular training units, of the employable skills profile of a job in industry or commerce),* and *enabling them to progress at their own pace.*

Boarding services, social and independent living skills training, and evening programmes, aiming *to develop trainees' self-care skills for daily living and integration in the mainstream* are run. Special function rooms, technical workshops and facilities are constructed to support the *vocational and social skills training*. These are conducted in the Centre by the teaching, instructional and boarding staff, vocational counsellors, social workers, occupational therapist, registered nurse. These are managed by administrative staff in appropriate balance between vocational and rehabilitation programmes, to optimize the development of trainees' abilities and potentials.

RANGE OF SUPPORTED SERVCIES FOR VOCATIONAL TRAINING AND OPEN EMPLOYMENT TO THE PEOPLE WITH DISABILITIES

Vocational Assessment Services

Before application to the Skills Centre, *all people with disabilities in Hong Kong* studying in the special education schools, or others, can *apply to be assessed by the Vocational Assessment Services Unit*, (which is also operated under the Vocational Training for the Disabled Section), usually before their graduation at secondary three. The Unit employs *international recognized test batteries* such as Valpar, Views etc. assessment kits *to evaluate the disabled persons' abilities, working aptitudes, interests, potentials and their various kinds of disabilities with specific identifications and recommendations*. Basing on their professional reports (compiled by industrial psychologist, social worker, occupational therapist, medical practitioner, experienced workshop instructor and teaching staff etc.), *appropriate development and training plans are formulated* by the referring agencies (e.g. school and rehabilitation social workers and placement officers) for their clients' future *appropriate placements and development*, e.g. be they suitable after training in Skills Centre for open employment, other supported employments, sheltered workshops, or day activity centers, etc. Through the assessment, sheltered workers or day activity centre clients etc., who have *upgraded their productivity* can also be *identified and offered appropriate training* in skills centers.

Vocational Training

Training of vocational skills in accordance with the *"Modules of Employable Skills"* are practised in our 18 *specially designed industrial and commercial simulated* workshops, to *minimize* trainees' *transfer of learning difficulties* encountered in the change of environment at work after their graduation. Supplemented with vocational skills training, communication, language, numeracy, computing, theoretical, industrial and commercial knowledge, techniques, skills training and physical education etc. are also taught in classrooms, function rooms, gymnasium and hall, as comprehensive education and training packages in 12 different trades. To enrich their training, trainees are arranged to participate in relevant industrial and trade visits, exhibitions and work trial schemes and extra-curricular activities etc. to *broaden their exposure and knowledge*. Internal job orders are also completed between sections and workshops, for pre-work training and real practices to *enhance their work skills, co-operative attitude, behaviour, group work and team spirit*.

Vocational Counselling Services

Our vocational counsellors are rendering vocational counselling guidance and advice to the disabled applicants, primarily *starting from their application*, and *throughout their stay in Skills Centre*, for their vocational training until their open employment after graduation. Basing on their *expertise, experiences, recommendation of the vocational assessment reports, abilities, interests/aspiration of trainees/parents*, selection of the courses are made. In collaboration with other staff of the work team (e.g. social workers, occupational therapist, training staff, centre managers), we work *to combat their vocational training problems and employment obstacles e.g. negative attitude and perception of the public and the employers, unfair terms of employment, higher work-related costs* (R. Heron & B. Murray, 1997), their work includes:

i) selection and development of appropriate *career plan*;

ii) individual as well as group *counselling* of vocational *training and learning problems*;

iii) group counselling on *job hunting and employment skills*, including co-workers' and line supervisor's relationships, working habits, behaviours, punctuality, diligence etc.;

iv) assisting trainees to find appropriate jobs *matching* their abilities and qualifications;

v) finding, *exploring and persuading employers to offer placements* to the disabled emphasizing the *benefits of their employments* e.g. their loyalty, diligence, cost-effectiveness, satisfactory performance etc. Employaid Fund is available for equipment or workshop adaptation requirements. (Better still, in Europe, wage subsidies, tax concessions, workplace adaptation grants or preferential treatments may be available (R. Heron & B. Murray, 1997));

vi) *accompanying* trainees for *interviews* with potential employers;

vii) assisting employers to make *workplace or workstation adaptation* (by Technical Aids & Resource Centre) if necessary;

viii) preparing them for *work trial schemes* for acquisition of working experiences and skills;

ix) *pre-employment work schemes* (a testing period both for trainees' and employers' mutual acceptance);

x) *supported employment follow-up visits*, (sometimes with teaching or other professional staff), to assist both the trainees and the employers for mutual adjustment and adaptation, whereby if retraining of trainees' skills/ attitude or workplace adjustment are necessary;

xi) *reflecting the market trend and changes* to management for constant review, and updating of training courses run;

xii) *feeding of data and latest development for new courses* to be mounted, in coordination with management, training staff and section heads.

xiii) *furthering studies in mainstream institutions*, inspectors of Vocational Training for the Disabled Section collaborates with our training/teaching and professional staff and *follow-up visits, advices on special teaching methods and arrangements* are made.

A *case* that a graduated trainee successfully completes vocational training and holds remunerable employment is attached in the Appendix I.

Independent Living & Social Skills Training in Boarding Section

Our Boarding Section is to *complement vocational training and reinforce trainees' independent living and social skills for their future working roles in the community. Basic and systematic daily living skills* are trained e.g. in cooking, in shopping and preparing food, table manners, cleaning of dormitories, proper self-care, personal hygiene, washing and drying of clothes; concept in use of money, time, and taking transportation, etc.

Social and interpersonal skills training are also provided to trainees for their integration with the mainstream in society, by running *evening programmes* and guiding more *interpersonal issues* e.g. more interaction among boarders and between houseparents for problem-solving skills and attending to instructions; by emotional disposition training group, drama training group, knowing and utilizing the community facilities outings, volunteer social work training group, stamp collection group, folk dance class, sports competition, karaoke competition, bowling, horse riding, hiking etc. All these help to build up their *learning of the social norms and rules in life, self-growing concept, team spirit in competitions, exploring their work potentials, utilizing and managing their leisure time more healthily and constructively, and enriching their enjoyment of a balanced life* in the future.

Social Work Counselling Services

Very often, trainees may be *obstructed from vocational training* because of various reasons e.g. personal, psychological, psychiatric, physiological or disruptive family factors, necessitating assistance from our social workers in *alleviating their troubles, solving their problems, or at least mediating the detrimental effects to their mental or/and physical states*. Obstacles for their integration into the mainstream employment and society may not only due to their disability, but also need for appropriate adjustment and combat of their psychological, psychiatric or physiological state of mind and behaviours for normal working, social interaction and acceptance. Generally, *social skills training, self-awareness, confidence building, respect for self and other, sex education* (especially for the female trainees for self-protection from abuse or harassment from work or daily life), etc. are also taught.

To be effective in *re-engineering/ modifying our trainees' to proper behaviours and attitude*, our staff, as vocational rehabilitation workers, requires to have a comprehensive knowledge of different kinds of *disabilities*, their different *disposition, behaviours and characteristics*. Furthermore, they need to have *care, concern and enthusiasm for their work, professional training* in social/ counselling disciplines, *well experiences* in the field, *collaborative team work spirit, life-long learning attitude to respond to new changes, requirements, horizontal (inside-out) exposure learning, and experiences* with other vocational rehabilitation organizations, for *inspiration of new knowledge, techniques and skills,* in order *to devise unique methodologies and guidances for each individual trainees*. A *case* summary is appended for a successful modification of attitude and behaviour from one of our trainees in the Appendix II.

Occupational Therapy Services

Our Occupational Therapist *works closely in collaboration with other workers* e.g. vocational counsellors, social workers, teaching staff, registered nurse etc. in *devising occupational rehabilitation plans* for the mentally and physically handicapped trainees, bridging their capabilities with the work requirements. She also matches appropriate; vocational/ job training with individual trainees' interests and aspiration, their work adaptation and technical aids to enable them to acquire the work skills and sustain their employments. A *case* summary is appended for the reinforcement of a trainee's abilities for work in Appendix III.

Medical Services

Our registered nurse provides professional medical services to *look after or guide the daily medication* of certain trainees, handles *minor injuries or wound dressing* and also participate in training the *independent self-care, hygiene knowledge, techniques and practices*. She also assists in handling emergency cases and sending trainees to hospitals when necessary.

Administrative and Management Support

In order to prepare our trainees for open employment and achieve our organization goals and objectives, a *clear and correct direction setting* with appropriate, *efficient and effective strategies and policies laid down. A design for a responsive, flexible and flatten structure of hierarchy* is established, to co-ordinate for speedy reaction to external and internal environmental changes, and to maintain and facilitate *functional efficiency in each subdivision. Resources* are sought to support our operation and improvement in the provision of quality services and training. We also have to *maintain an efficient administrative and clerical support* to all functions of training and rehabilitation work in the Centres.

Other Complementary and Subsidiary Activities

Centres also plan and schedule many different kinds of *extra-curricular activities gearing to enhance and reinforce trainees' social, interpersonal, and independent skills. Aiming to guide trainees' proper character built-up, nurturing their personal developments, team-work spirit, integration skills with people* (co-workers, employers, supervisors, friends etc.) are trained. Their *aspiration and development of interests* are also built for living normally *in the mainstream society* and leading subsequent healthy and successful working lives.

Technical Aids and Resource Centre

The Centre is one of the support services to the vocational training for people with disabilities in Hong Kong, which assists in the *design and production of employment, training required technical aids and learning resources*, to meet the particular needs of individual disabled workers in employment or during training.

CONCLUSION

Recently other rehabilitation agencies and Funds are also established to provide vocational rehabilitation programmes and services e.g. the Employees' Retraining Board, the Selective Placement Division of the Labour Department, supported employment services, on-the-job training services and tailor-made courses, funds granted to the self-employed disabled by the Employaid Fund, the Royal Hong Kong Jockey Club and the Queen Elizabeth Foundation for the Mentally Handicapped, the Government and non-government organizations etc.

The competition we face is fierce. This challenges us to continuously provide quality services in the vocational training for people with disabilities in the region. Our vocational training programmes will have to be regularly reviewed and revised to deal with the continuous shift of Hong Kong's economic structure from a manufacturing centre to a tertiary services provider (Rehabilitation Paper, 1995). We shall work towards the benefits, vocational training and rehabilitation of the disabled trainees, enabling them *to work in the open market and securing remunerable employments; meeting our organization mission and objectives* (Smith, 1990 p.4) as targeted.

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APPENDIX I. Case from Vocational Counsellor

P.L., suffered from hearing impairment and studied in our Commercial Class. Client's communication skill was average, but lacked self-confidence. During training period, she was arranged to attend a work trial scheme in a solicitor's firm for a month. The solicitor found her working attitude and habits were good, but she was too timid and anxious.

After graduation, the solicitor was persuaded to employ P.L. The solicitor gave her a chance. During the probation period, client got adjustment problems as she could not hear clearly. There was some misunderstanding among her colleagues. As client was too reserved, she was only willing to disclose her worries and difficulties to her mother for the first month. Our Vocational Counsellor made frequent phone contacts with the mother to find out client's problems. Frequent follow-up visits were also made in her workplace to render counselling to client, and to discuss and solve her adjustment problems. Finally, client was settling down quite well in her workplace. She mixed well with her colleaques, and the employer was satisfied with her performance.

APPENDIX II. Case from Social Worker

H.K. was a mentally handicapped and encountered interpersonal relationship difficulties. During his training, he thought he fell in love with a female trainee who however refused him. He was so depressed that he cut his hands. The affair seriously affected his self-confidence and performance at workshop. H.K. was counselled to use correct way to ventilate his negative emotions and to use right way to accept rejection. Nevertheless, he thought he was useless, inferior, depressed and unhappy. He was assisted to build up an objective view of himself by identifying his own strengths, beside his weaknesses. He had made improvement during his training period and gradually, his self-confidence increased.

It was encouraging to see H.K. making a lot of improvement in building up problem-solving and interpersonal skills before graduation. Months ago, when he came back to visit us, we were very

happy to learn that he could maintain his job, got along smoothly with others and enjoyed his work environment.

APPENDIX III . Case from Occupational Therapist

K.Y. was emotionally labile, walked with dragging gait due to weak lower limb muscles and resting tremor over both arms and legs. She was unwilling to speak and answered in very soft voice. Her diagnosis was not clearly stated whether her presenting problems of mutism, and disuse atrophy of hypothenar muscles were due to functional or psychological origins. When treatment started, she was prescribed with therapeutic activities to strengthen her lower limb functions. Communication cards were used to encourage her verbal practices. Counselling was provided constantly to soothe her emotions and to explore her hidden feelings (which caused her to become mute). Liaison was also made with social worker to work on her emotions and abnormal communication behaviours. Her mother was also interviewed to solicit her support in assisting client and information gathering.

During the course of treatment, we noted she showed progress on her hand functions with decreasing tremor and increasing fine motor coordination. She showed improvement in her walking manner and she was willing to greet Therapist with smile and words. She now answered questions in short sentences, emotionally more stable and sometimes even laughed at interesting topics as normal person.

CORRESPONDENCE

Prepared by: Eliza LO CHAN Woon-ching
Centre Manager
Tuen Mun Skills Centre
1, Fung On Street, Tuen Mun , N.T.
Tel. No.: 2452 6677 Ext. 202
Fax No.: 2457 6207
E-mail Address: vtdstmsc@vtc.edu.hk
Vocational Training for the Disabled Section
Vocational Training Council

EXPLORATION OF THE ABORIGINAL VOCATIONAL TRAINING IMPLEMENTATION STRATAGEM FROM THE OUTLOOK OF THE "TRIBAL CLASSROOM"

Chou, Chin-hung

Director of Miao-Li County Cultural Center, Taiwan

Index: Aborigines, Tribal Classroom, Vocational Training, Implementation Stratagem

Abstract: In recent years, the economic development and the changes in the industrial structures in Taiwan have caused the agriculture-based production structure to breakdown among the aboriginal people of Taiwan. Employment opportunities in the traditional tribal villages have declined sharply and a great numbers of people have moved out of the villages. Foreign laborers have also created a high rate of unemployment among the aboriginal people and has weakened and limited their ability to compete with others. Therefore, in order to increase Taiwan aborigines' employment competence and employment opportunities, this article will be based on the perspective of the "tribal classroom" to explore suitable approaches and methods to implement vocational training among the aborigines. It is hoped that through self-awareness among the aborigines and through employment demand that the vocational plan stressing cultural learning, livelihood work, and the tribal environment, accomplishing through by the setting up of the "tribal classroom". The plan will promote tribal culture and enterprises, increase enterprise development and employment opportunities, and create comfortable residential and the tribal villages.

PREFACE

Recent years, the rapid growing economic development and the changes in society, harm the former way of the aborigines' self-sufficient life. It caused the agriculture-based production structure to breakdown and the employment opportunities in traditional tribal villages to decline sharply. Therefore, a large number of aborigines moved to the cities and to industrial areas for work. Agriculture production resources declined dramatically. Besides, the policy of allowing foreign laborers, has created a high rate of unemployment among the aborigines, and has weakened and limited their ability to compete with others.

Facing this problem, the government designed several programs to encourage the aborigines to participate in vocational training and to provide the employment information. But the aborigines themselves lacked the desire to participate in vocational training. There were reasons: the aborigines didn't realize the special needs of their tribe, and the place and time of training didn't fit into the tribal life style.

We have a principle of respect for multi cultural development, therefore we must respect the aborigines as we promote occupational training, localization of the occupation training. There is need the localization in the occupational training of aborigines, local circumstances need to be considered and there is need to be flexibly. The area will be relatively small; nearby groups will come together at a convenient time for training (Hsieh, 1997). This article has for its goal— suitable training for the aborigines. It is hoped that the self-awareness on the part of the aborigines and the demands of employment will bring about a vocational plan fitting the character of the aborigines.

THE IMPLEMENTATION OF ABORIGINES' VOCATIONAL TRAINING PLAN

To help the aborigines to adapt to modern society and to get a job more easily, the government has encourage many efforts and promote several plans, it encourage vocational organizations and private groups to help. It has subsidized the training of aborigines. It has promoted aborigines to get positions. It has placed aborigines in employment situations. It has encouraged the private sector to hire aborigines. It has made plans for the employment of the aborigines, etc.

Mostly there were some characters within these cases as below:

1. Practical vocational training

There are 13 public vocational training organizations in Taiwan, with 160 kinds of activity. The main object is to enroll the junior high school students in a training program. There is stressing, study, career change, and special vocational training (Hong etc., 1997). Besides the public vocational training organization for the aborigines, there also entrust the governmental organizations, the civil groups, the enterprises, and the school units that operate special training, and offer opportunities and space for aborigines' vocational training. As an estimated total, there are 58 classrooms, and 1622 persons have joined the training program form July 1999 till December 2000 (Job Training Bureau of Labor Commission, Executive Yuan, 1999).

2. Combine vocational education and training to provide opportunities for aborigines

18 vocational schools promote the vocational education of aborigines, and cooperate with the vocational training center, to place aborigines in jobs.

3. To provide preferential treatment for aborigines to join vocational training

To aborigines to join vocational training programs, during the training period, living expenses, and scholarships, are provided. Those who get the license of a senior specialist receive special financial rewards.

4. To provide preferential treatment for aborigines' placement

Those jobless aborigines who have the ability and the desire, a subsidy is granted— this provides for transportation, a temporary job, training, a business start-up. They also subsidize enterprise that hire aborigines and subsidize the placement brokers.

They are to strengthen the placement service for aborigines and vocational technical training. They are to set up a consulting committee for the placement and vocational training of aborigines. They are to print a handbook of the rights of aborigine people, are to help from labor cooperatives for aborigines (Job Training Bureau of Labor Commission, Executive Yuan, 1999). They are to strengthen the principle of equal opportunity for the vocational training of the aborigines and provide preferential treatment and special protection for aborigines. They will eliminate unfair practices through a secure placement system under the supervision of social welfare.

The results of promoting the vocational training of aborigines in recent years have been good. Undoubtedly prejudice still exists in Taiwan society. The problems the vocational training of aborigines are various and complicated. Those result from the political, economic and cultural situation on Taiwan. Chang (1999), Cheng (1998), and Hsieh (1997), pointed out the reasons why the aborigines are unwilling to enter programs of vocational training:

(1) they don't realize the importance of the vocational training;

(2) the training places were not suitable;

(3) the time required didn't fit their needs;

(4) they can not adapt to the training method;

(5) the kinds of vocation training didn't correspond to the needs of tribe;

(6) lack of the necessary qualification to enter the training program;

(7) lack of special classes geared to them;

(8) the training period is too long;

(9) they are not satisfied with the preferential service;

(10) they can't support their families during the training period;

(11) the lack of companies managed by aborigines that could be used for training.

THE MEANING OF "TRIBAL CLASSROOM"

During the past ten years, several new policies have been initiated for aborigines. One reason for this was the development of the "Aboriginal Movement". This movement stressed protection of aborigine culture and promotion of the aborigine language. This is promoted development among the aborigines and promoted changes in society through cooperation and dialogue (Lee, 2000).

The 'Tribal Classroom" was part of the culture movement promoted by Tsur Goo-Liu of the Pai-wan Tribe. He thought the difficult situation of the aboriginal tribal development was caused by the lack of work that would support their livelihood. He through that cultural identity and awareness were necessary base for development. Through a culture renewal, the work ethic would be strengthen, through tribal organizations products would be sold locally a wider market. No longer would people have to leave from tribal environment for work. Even those who left for work might return (Tsur, 1998). There are the characteristics of the 'Tribal Classroom":

1. Based on the situation of the tribal, educational programs that promotion work and enterprise would have their own special features.

2.Tribal development would need culture learning, enterprise to support livelihood and protection of the environment.

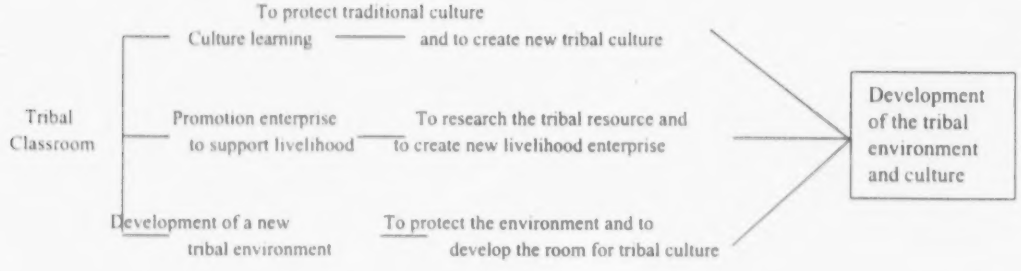
To protect traditional culture
Culture learning
and to create new tribal culture
Tribal Classroom
Promotion enterprise to support livelihood
To research the tribal resource and to create new livelihood enterprise
Development of the tribal environment and culture
Development of a new tribal environment
To protect the environment and to develop the room for tribal culture

Fig. 1 The significance of "Tribal Classroom"

THE COMBINATION OF THE "TRIBAL CLASSROOM" AND VOCATIONAL TRAINING

1. The concept of the combined the "tribal classroom" and vocational training

The population of the tribal groups are not only relatively few vis-a-vis other groups. But their culture is also quite different from the majority of Taiwan society. In the acculturation process of the tribal groups in the wider society, they face the choices of protecting traditional culture or adapting to modern society. The aborigines must acquire the modern technical vocational training in order to survive in economic system of modern industry. However, modern vocational production activities may conflict with the traditional culture of the aborigines. Many people think there is need develop manufacturing techniques that conform to the character of aboriginal culture (Hsieh, 1997). Hence, through self-awareness of the aborigines and their employment needs, they can combine culture learning, livelihood enterprise, and the protection of the tribal environment by using tribal resources through the "tribal classroom". It is hoped that tribal culture and enterprises will be promote, that network learning will increase, that there will be industrial development and increased employment opportunities, that comfortable residential villages will be built. See Fig. 2.

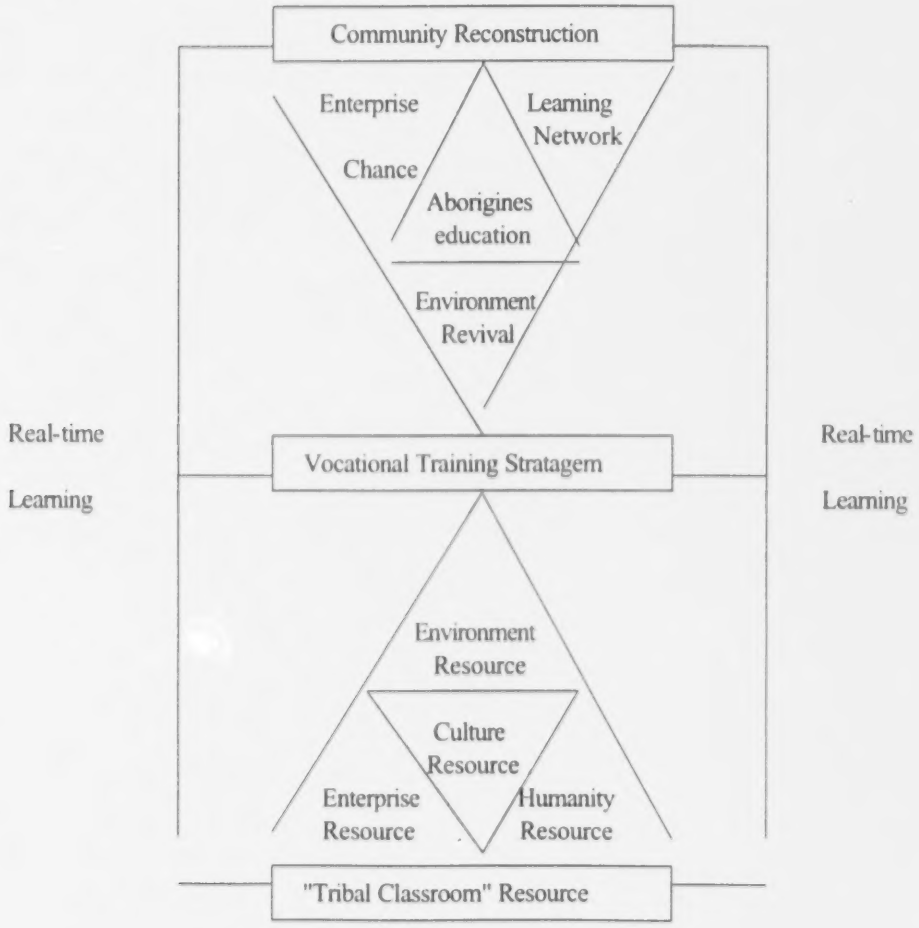

Fig. 2 The concept of the combined the "tribal classroom" and vocational training

2. Implementation stratagem

(1) Searching and preserving tribal resource is the basis for vocational education and development training. Aboriginal culture assets are preserved in the tribal community. Searching and preserving tribal resource not only can reach the goal of preserving culture, but also have as a goal the spread of culture and the creation of a new cultural. Hence, tribal culture isn't a dead specimen or only a basis for business activity, but it's the modern civilization ready to face everyday life and changing world (Tan, 1998).

(2) Tribal villagers are to participate in making vocational training goals and in planning the courses. In the past, the aboriginal vocational training goals and courses were based on social development as a whole, but neglected the aborigines' special need for vocational training or did this in a confused manner. Through the plan of the 'tribal classroom" tribal villagers can participate in public affairs and through aborigines' self-awareness, and understanding of the present crisis they can see the need for vocational training. They can participate in making vocational training goals and planning courses and programs for their own tribal villagers.

(3) Tribal vocational training and employment information centers are to be established. The tribal nature of the people has to be recognized. They can participate in activities locally and they will conform to their way of life. There will be improvement in the level of vocational information and training.

(4) Vocational education and training will promote the concept of learning throughout one's life and develop the tribal learning network. By raising the education and training are effective ways to develop the manpower resource of the aborigines. Vocational education and training play a care role in "tribal learning network", provide flexible learning style and multi-purposed learning methods, establishes and develops the vocational knowledge and the aborigines and improve their intellectual capacity for daily lives.

(5) In positively cultivates the talented aborigines who are expert at business management and sales, they will be leaders of the tribal livelihood industries. It promotes cooperation in buying and selling in the "tribal market". It will increase production and market competence of the tribal enterprises.

(6) It uses technical methods to create extra income. It also fosters a network to share learning experiences with the other tribal villagers, through this information, they can examine and foster tribal relationship and culture identity.

(7) It implements e tribal ecological preservation, environmental protection and the preservation of tribal villages, and reestablishes former tribal villages. By improves the tribal villagers' living standard and environment, it reinforces aborigines' self-respect and self-confidence, and promote the ability to adapt and the competence of tribal society.

CONCLUSION

Economic development at times brings negative social results. It brings more uncertainty to human life. Seeking a comfortable life and harmonious society are the natural desire and needs of all. People begin to think of their future. Now some urban people are beginning to move back to countryside, to their original hometown and birthplace. Capturing the original vitality of the community will make people feel that they belong to. That is to say, in this open society, we must recognize the need for the vitality of the tribal villagers and the need for the development of vocational training. By combining these two, there is an opportunity for new vitality in the life of the aborigine people — a vitality created by themselves belonging to themselves.

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CORRESPONDENCE

Chou, Chin-hung

Director of Miao-Li County Cultural Center, Taiwan

E-mail: mli26055@ms25.hinet.net

PROFESSIONAL ETHICS – A LIFE-LONG PURSUIT BY AN ENGINEER

Ir Dr. C.K. Leung
Department of Electronic and Information Engineering
The Hong Kong Polytechnic University

Ir Jolly Wong
Information Engineering Discipline
The Hong Kong Institution of Engineers

Index: Professionalism, Ethics, Information Technology.

Abstract: After an engineering student has finished the studies in a college, he (or she) is prepared to, usually with much enthusiasm and high hopes, embark into a new world to make use of what he has learnt for the betterment of the society and the engineering profession. The pursuit of the "Real", the "Good", and the "Beautiful" has been the highest goal. With the dawning of the e-Commerce and "Dot-Com" era, with the IT (Information Technology) heat sweeping through the world and catching everyone by surprise, and with the rapid replacement of traditional materialistic substances by their electronic and cyber counterparts, we will witness a new economic order and have to adapt ourselves to changes in the engineering discipline. An important goal of continual and life-long education for an engineer is coping with changes around us while discharging various responsibilities required by the profession. This paper discusses, from the perspective of the IT profession and with reference to IT-related scenarios, the issues about professional ethics and the various expectation and requirements made on its members by a professional body.

INTRODUCTION

The engineering discipline has served mankind for a very long time. Starting from the ancient days, engineers were busy in conquering the nature to make a better living environment for their fellow humans. They removed the hills, leveled the grounds, built houses, roads, bridges, canals, tunnels. They made tools to ease jobs, made weapons to hunt and guard against wild animals. In modern times they build high rising buildings, machineries, automobiles, airplanes, telephones, computers, the Internet. With more inventions having been made, mankind would be able to enjoy an overall improvement in living standards. The roles of engineers have become so diversified that their contribution is to be found almost everywhere. A recent phenomenon is the "high-tech" wave whereby the Internet connects up large numbers of users and supports numerous applications. Computers are becoming more and more important and their usage has become more widespread. The "high-tech" wave brings about new challenges and new threats to the society, and in particular to the engineers in the information technology (IT) area. Faced with rapid changes in technology, IT engineers may experience conflicts of interest when performing their duties. How should he or she resolve the conflicts of interest arising from performing the job duties? What codes or guidelines can an engineer follow? This paper discusses the issues of professional ethics and investigate how a professional body can uphold the professional ethics standard among its members.

ENGINEERING PROFESSIONALISM

Together with the legal and the medical professions, engineering has been regarded a profession. What are then the qualities of a profession? According to [Fleddermann 1999], one of the qualities exemplified by a profession is that it requires high-level work that cannot be done in a routine manner by a layman without proper education background and subsequent training. It calls for judgment, experience, and sophisticated skills that can only be achieved with the appropriate education background and sufficient practical experience. Judging from this context, there is nothing wrong that a certain type of job is not a profession. It may that that the job nature is routine, or can be mastered in a short time by the average people without any specific education background. Nevertheless numerous jobs of this type are crucial to the normal functioning of the society. Fig. 1 shows, in a conceptual manner, how education background and experience combine to form the basis of a profession.

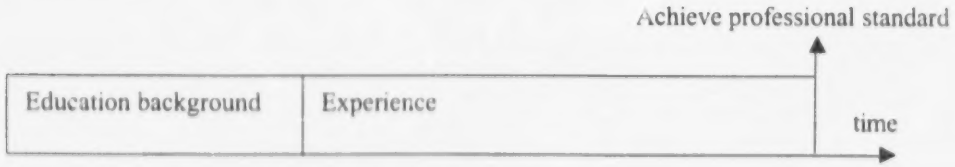

Fig.1 Profession quality

The practitioners of a profession (i.e. the professionals) never work alone. They need to join force in setting standards, and advancing the knowledge and technology, and in finding solutions to new problems. There is the need of a professional society (also called a professional body) for those who have met the education and experience requirements to join. An important function of the professional society is to uphold the professional standards required from its members. Standards are important in ensuring that the works performed are up to a certain acceptable quality. These are the yardsticks (pass or fail) against which the level of accomplishment is measured. Another function of the professional society is to spell out those things its members can do and those they cannot when practicing their profession. These are usually called the "Codes of Ethics" or the "Codes of Practice". These codes serve the function to guide members of the professional society on the right track. In case problems occur to their members, a professional society may provide assistance back up the members on the grounds of codes of ethics adopted by the society. A famous case in the discussion of engineering ethics is the BART case in 1975 where three engineers were fired by their company for "whistle blowing" – drawing the public attention to a potentially unsafe design of an automatic train control system. Since their actions were deemed to be compliant to the codes of ethics laid down by IEEE, the three engineers got the full support of the IEEE [BART 75]. To be a member of a professional society means that one's actions are governed by the codes of practice. In this way, professional membership is synonymous with high quality and is a label for the public to have confidence on.

The third quality of a profession is that it must do something *good*. On the surface, this requirement is obvious. But in practice it may be difficult to decide what is good and what is bad. To do so requires the application of moral standards, ethical standards, and materialistic standards. Hence this is the most ambiguous quality when it comes to actual practice and professional ethics has an important part to play here.

ETHICS AND MORAL

When we were young, we were always told by our parents to do this and that, and not to do this and that. Is there a set of rules that governs what we must do and what we must not? Some ethics theorists believe that we as human beings should have a set of basic rights. By nature we are allowed to do something. To respect others' rights, one has to refrain from doing something or one is bound to do something. This is the set of duties. Under the equality principle, rights and duties share a duality relationship. Because we have the rights of not to be disturbed, then must also have the duty of not disturbing others. Rights and duties can be defined for the engineering profession to govern what an engineer should do or should not do. When conflicts of interest occur, the engineer can apply the rights and duties principle to determine the necessary actions. The problem with the rights and duties principle is that there is not a universal set of rights and duties that everyone accepts. Sometimes it is difficult to decide whose rights should be respected more when conflicts occur. Another ethics theory is that we should do something which brings about the most benefit. This is a materialistic approach where benefit counts the most. The difficulty of applying this ethics theory is that it would be very difficult to calculate the amount of actual benefit in complicated situations involving the society, companies, individuals stretched over a large time scale. Something beneficial to a company may not be beneficial to the society, or long-term benefit may out-weigh short-term benefits.

PROFESSIONAL ETHICS IN IT

Due to the rapid penetration of our daily lives by the World-Wide-Web (WWW) technology that is fueled by the Internet, Information Technology (IT) has played a very important role in modern society. As an IT engineer, what would be the professional ethical problems that he would encounter?

A large number of professional ethical problems are related to the use of computer or the manipulation of data. A consequence of the popularity of the Internet and the WWW is the phenomenon that computers, and people as well, are "connected". It is only a matter of a simple click in the mouse to initiate data exchange between two computers. Documents residing in computers thousands of kilometers away can be downloaded in a matter of seconds. The protection of computer resources (hardware, software, data, and software) from unauthorized access becomes an eminent problem. It is not uncommon to see news reports on web sites being hacked – being accessed by unauthorized users. Sometimes no harm would have been done and only nuisance has been caused. But the other extreme is that millions of dollars in revenue is lost as a result of a distributed denial of service (DDOS) attack. The detrimental effects of computer-related crimes on the economy should not be taken lightly. As a IT professional, what are his/her responsibilities over these issues?

First of all, IP professional should have a set of codes of ethics to follow. To be qualified as IT professional, an IT engineer must join a professional society and then adhere to the codes of ethics. Secondly, IT professionals should apply their knowledge to design IT systems such that they provide services with high quality as far as costs, availability, robustness, response time, and security are concerned. They should employs techniques to ensure that information are exchanged in a secure and cost-effective manner across the Internet. Thirdly, the IT professional should provide education to the general public about the proper use of IT. There are many reported cases about youngsters playing the role of hackers. This is a consequence of poor education. Youngsters and grown-ups should be educated about the what can be done and what cannot.

As far as IT projects are concerned, IT professionals should note that IT projects change

very rapidly. In every six months there will be some advancement in technology or product features. The IT Engineers should plan IT projects such that variations are allowed for. They should also define clearly the acceptance standard of work that cannot be measured merely in physical terms and quantities. Say, software standard and quality, system response time, and level of maintenance and supporting services etc. An IT professional should follow closely industry standards development. Due to the lack of precedents and case laws in the resolution of conflicts between contractors and engineers, as compared with traditional disciplines such as building, civil, mechanical, special attention should be paid to issues such as risk sharing among clients and contractors and unforeseeable disruption. The IT professional should ensure that the risks to be shared by contractors and employers are well balanced, open, and fair.

THE HONG KONG INSTITUTION OF ENGINEERS (HKIE)

The HKIE has laid down four Rules of Conducts as the cornerstone of conduct requirements of professional engineers. The first rule is about the responsibility of its members to the engineering profession. The second rule is about the responsibility of its members to their colleagues. The third rule is about the responsibility of its members to their employers or clients. The fourth rule is about the responsibility of its members to the Public. These comprehensive rules and the corresponding codes of practice prescribe the way an HKIE member should follow in order that the ethical requirements are satisfied. There is a Disciplinary Board in HKIE to take disciplinary actions against wrong doing committed by its members. The Disciplinary Board is composed of members from al the sixteen disciplines in HKIE, among them the Information Discipline is one of them. An example of drastic actions taken on a member removal of membership status and the removal of the member's name from the registration list of registered professional engineer.

PROMOTING PROFESSIONAL ETHICS

The Hong Kong Institution of Engineers (HKIE) and the Hong Kong Ethics Development Centre (HKEDC) have organized a seminar on "Professionalism and Ethics for Engineers" on 12th December 1998. There were 110 participants and favorable response towards this seminar was noted. In this seminar, there was a case study session in which participants were presented with hypothetical scenarios depicting ethical dilemmas that an engineer might possibly encounter at work. Participants showed great interest in the case discussions and most of them rated the group discussions useful and applicable in their daily work situations. The professional codes published by the HKIE is a handy reference and principle guidelines to its members. In addition to this code, it is felt that certain practical guidance on how to deal with possible ethical problems encountered in their workplace may also be beneficial to HKIE members. This publication, "Ethics in Practices - A Practical Guide for Professional Engineers" by the HKIE and the Hong Kong Ethics Development Centre of ICAC, therefore aims at providing professional engineers with a quick reference on some common ethical issues in their areas of work as well as proposing ways to handle such ethical dilemmas.

PROFESSIONAL ETHICS TO ALL MEMBERS?

The code of practice is applicable to all classes of members, from student, graduate, associate to coporate and fellow members. Any misconduct by HKIE members would be subject to disciplinary action.

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CORRESPONDENCE

Ir Dr. C.K. Leung
Department of Electronic and Information Engineering
The Hong Kong Polytechnic University
Hung Hom, Kowloon.
Tel: 2766-6260
Fax: 2362-8439
Email: enchikin@inet.polyu.eud.hk

Ir Jolly Wong
c/o The Hong Kong Institution of Engineers
9/F Island Centre No.1 Great George Street
Causeway Bay, Hong Kong.
Fax: 2577-7791
Email: jollywong@yahoo.com